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Analysis of Naval Information Warfare Systems Command (NAVWAR) Contracting Processes using the Contract Management Maturity Model (CMMM)

December 2020

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ABSTRACT

This study assesses Naval Information Warfare Systems Command (NAVWAR)'s process capabilities and competencies. A cross-sectional questionnaire was used for this study and includes contracting processes and compares it to NAVWAR's 2020 Procurement Performance Management Program results. The purpose of this research is to summarize the assessment ratings of NAVWAR contracting processes and utilizing NAVWAR's contract management process maturity when analyzing the assessment results. When assessing NAVWAR's contract management processes, our research applied the Contract Management Maturity Model (CMMM). The survey questions are designed to cover all contract management key process phases within the contract life cycle. We address the implications of the results of the assessments for process improvement and contracting knowledge management. We also provide insight on any trends and consistencies of best practices.

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ABOUT THE AUTHORS

LCDR Brandon Stewart earned his commission in the Navy Supply Corps through Officer Candidate School program in November 2009 after graduating from Texas A&M University in May 2009. His sea tours include duties as Supply Officer onboard USS HENRY M. JACKSON (SSBN 730) (BLUE) and Materials and Stock Control Officer onboard USS GEORGE WASHINGTON (CVN 73). Ashore, he served as an intern at Naval Air Systems Command (NAVAIR) and the Material Control Officer at Strike Fighter Squadron 122 (VFA-122). He is currently attending Naval Postgraduate School to earn his master's degree in Contracting. He has follow-on orders to Headquarters Supreme Allied Commander Transformation (HQ SACT) and will be their contracting officer. He has earned warfare qualifications in Naval Aviation Supply, Surface Warfare Supply, and Submarine Supply.

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ACKNOWLEDGMENTS

rigorous program. Their love and perseverance gave me the strength needed to push on each day.

Najib Hamdouni

I want to dedicate this thesis to my wife, Fatou. Her love and support encouraged me to put forth maximum effort in accomplishing this thesis. I want to thank my children, Mariam, Mehdi, Imani, and Raheem. Their love and support provided me the mental strength to finish strong.

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LIST OF ACRONYMS AND ABBREVIATIONS

2.0	NAVWAR Contracts
ANS	American National Standard
ASN(RD&A)	Assistant Secretary of the Navy for Research, Development and Acquisition
AWF	Acquisition Workforce (AWF)
C4I	Command, Control, Communications, Computers and Intelligence
CMMM	Contract Management Maturity Model
CMS	Contract Management Standard
COR	Contracting Officer's Representative
COSO	Committee of Sponsoring Organizations of the Treadway Commission
CRB	Contract Review Board
DASN(AP)	Deputy Assistant Secretary of the Navy (Acquisition & Procurement)
DAU	Defense Acquisition University
DAWIA	Defense Acquisition Workforce Improvement Act
DFARS	Defense Federal Acquisition Regulation Supplement
DOD IG	Department of Defense Inspector General
DOD	Department of Defense
DON	Department of the Navy
EIS	Enterprise Information System
ERP	Enterprise Resource Planning
FAR	Federal Acquisition Regulation
FFDS-NG	Federal Procurement Data System-Next Generation
GAO	Government Accountability Office
GCPC	Government-Wide Commercial Purchase Card
HCA	Head of Contracting Activity
HQ	Headquarters
IOP	Internal Operating Procedures
NAPPM	NAVWAR HQ's Acquisition Policy and Procedures Manual
NAVAIR	Naval Air Systems Command

NAVSEA	Naval Sea Systems Command (NAVSEA)
NAVSUP	Naval Supply Systems Command
NAVWAR	Naval Information Warfare Systems Command
NCMA	National Contract Management Association
NDAA	National Defense Authorization Act
NMCARS	Navy Marine Corps Acquisition Regulation Supplement
OCS	Operational Contract Support
OSBP	Office of Small Business Programs
PEO	Program Executive Office
PMW	Program Manager Warfare
PPMAP	Procurement Performance Management Program
RFI	Request for Information
SECNAV	Secretary of the Navy
SII	Special Interest Items
SME	Subject Matter Expert
SYSCOM	Systems Command

I.   INTRODUCTION

The Department of Defense (DOD) has continued to be the dominant contracting agency in the federal government for many years in terms of contracts awarded and dollar amount obligated. These DOD contracts count for almost two-thirds of federal contract spending (Government Accountability Office [GAO], 2020). In 2018, the DOD awarded over $350 billion in contracts, involving 570,000 new contracts for critical and noncritical supplies and services to 38,000 contractors (GAO, 2020). In 2019, the DOD allocated approximately $389 billion to supplies and services (USAspending, n.d.). In particular, the Navy has followed the same spending trend, obligating over $120 billion in 2019 in funding over 142,000 contractual actions (USAspending, n.d.). This pattern of the continuous increase in DOD budget spending creates an environment where more contractual actions exist than ever before, which requires contracting professionals to establish an effective contract management framework. The importance of capable contract management processes is becoming a critical element in ensuring well-executed contracts and proper use of taxpayer dollars with an emphasis on leadership support, transparency, integrity, and accountability.

Since 1992, the GAO has included the DOD's contract management on the high-risk list and identified three major areas of improvement. The first area of concern is the acquisition workforce due to its reduction in the mid-1990s, which eventually created skill gaps and continuous reliance on contractors (GAO, 2019). Another area of concern in DOD contact management is service acquisition with difficulties in clearly defining the service requirements and establishing a standardized process for acquiring services and proper foresight (GAO, 2019). The last challenge area in contact management is operational contract support (OCS). Even with billions of dollars spent on contracts, the DOD still experiences difficulties in managing capability gaps, establishing OCS guidelines, and integrating OCS into training and plans (GAO, 2019).

The DOD inspector general (DOD IG) has continued for many years to classify different deficiencies in DOD contract management. These deficiencies are taking place throughout the contract life cycle and are related to weak procurement and contract planning

and lack of contract administration, accountability, and oversight (DOD Inspector General [DOD IG], 2015, 2017, 2018). The DOD still struggles to ensure that products and services are delivered on schedule and at the right cost. Many DOD contracts fall short on meeting the contract schedule, cost, and performance requirements (DOD IG, 2019). Improper contract management can result in cost overruns, fraud, and reduction in capabilities delivered to the end users and warfighters. Because of these identified discrepancies, the DOD IG has labeled acquisition and contract management as one of their top 10 management challenges for the DOD (DOD IG, 2019).

The DOD's response to the GAO and the DOD IG reports on contract management deficiencies focuses on developing, sustaining, and improving the acquisition workforce by adopting and implementing education and training metrics to measure and assess the acquisition workforce growth and skills (GAO, 2019). The DOD's response to all of these deficiencies has always been training. There has been no response related to process capability or improving processes. The DOD needs to focus more on organizational process maturity, not just on developing individual competencies. An organization's contract management process maturity will contribute to successful and improved results for an organization (Rendon, 2015). Many academic researchers have highlighted the benefits and the importance of effective contract management, including assessing the contract management process. These studies also suggest that organizations with a higher contract management process maturity level can have better contract performance results (Rendon, 2016a). Additionally, contract management process maturity is a key success element to both DOD contracting organizations and the industry agency partners (Rendon, 2012).

Assessing contract management processes and utilizing the results to develop an improvements road map is an essential factor in ensuring the auditability of an organization. "Auditability theory emphasizes the need for competent personnel, capable processes, and effective internal controls to ensure integrity, accountability and transparency in procurement operations" (Rendon & Rendon, 2015, p. 750). Assessing contract management effectiveness is measuring the effectiveness of its processes, which can determine the contract management process' maturity (Rendon, 2015). The Contract Management Maturity Model (CMMM) is a tool that provides a framework to assess and determine the contract

management process' maturity levels through the contract life cycle and outlines a road map to improve the process capability (Garrett & Rendon, 2005).

The CMMM was previously applied to other Navy systems commands such as Naval Air Systems Command (NAVAIR), Naval Supply Systems Command (NAVSUP), and Naval Sea Systems Command (NAVSEA) (Rendon, 2016a). The CMMM was used in these organizations to assess the contract management process maturity level and capability and to develop a plan to implement improvements for the contract management process.

This study focuses on Naval Information Warfare Systems Command (NAVWAR), which expressed interest in our thesis research and indicated strong management support for completing this project. NAVWAR is the central command responsible for identifying, developing, delivering, and sustaining all the information warfighting capabilities to support naval, joint, and other national critical missions (Naval Information Warfare Systems Command [NAVWAR], n.d.). NAVWAR consists of eight major functional areas, but our assessment is focused mainly on the NAVWAR Contracts (2.0) division located in San Diego, CA. NAVWAR Headquarters (NAVWAR HQ) leadership acknowledges the advantages of conducting the CMMM assessment to determine and analyze the maturity levels for their contract management processes, in an effort to initiate and provide a path towards contract management process improvements (Rendon, 2015).

A.   PURPOSE

The primary purpose of this research is to analyze NAVWAR HQ contracting processes utilizing the CMMM. This report explores the maturity levels within NAVWAR HQ's six phases of the contract management process, provides a comprehensive analysis of the provided ratings, and offers contract management process improvement recommendations for NAVWAR HQ.

The secondary purpose of this research is to compare the CMMM results to NAVWAR HQ's Procurement Performance Management Program (PPMAP) results. We analyze the PPMAP results to determine whether NAVWAR HQ's performance results are consistent with the results found in the CMMM assessment. Additionally, the report includes

an analysis of the recommendations from the PPMAP results and compares them with recommendations from the CMMM regarding contract management process improvements.

B. RESEARCH QUESTIONS

Kovack (2008), in dealing with the same issues of process change, explains the essential argument:

> 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 the assessment is to ascertain the extent of real and/or perceived gaps to achieve such an end-state. (p. 4)

To meet the objectives of our research, we answer the following questions:

(1)   Primary Research Question

What are the maturity levels of each contract management key process area at NAVWAR HQ?

(2)   Secondary Research Questions

How can NAVWAR HQ improve its maturity levels for each contract management key process area identified from the CMMM assessment?

How do the process maturity levels compare to NAVWAR HQ's 2020 PPMAP results?

C. BENEFITS AND LIMITATIONS

The findings from this research promise to help NAVWAR HQ leadership recognize and improve the maturity levels of NAVWAR's contract management processes (Rendon, 2016a). The CMMM assessment outcomes provide various views regarding the maturity levels of NAVWAR's contract management process. The results could show various levels of maturity within each contract management process area (Garrett & Rendon, 2015). For example, a process area can be rated at the *"Basic"* maturity level, which could identify areas of improvement in established processes. Another process area could be rated at the

"Optimized" maturity level, which would indicate that best practices and lessons learned have been established for the organization (Garrett & Rendon, 2015).

The research analyzes the CMMM assessment results and provides a benchmark on where the organization's contract management process capabilities currently stand. From there, NAVWAR HQ "can develop a road map for process improvement initiatives as well as workforce competency training for improving its contract management process maturity" (Garrett & Rendon, 2015, p. 87).

As with Rendon's (2016a) assessment of other major Navy SYSCOM's CMMM results, this research provides the ability for NAVWAR HQ leadership to compare their CMMM assessment results to the PPMAP results. This helps determine whether there is a pattern between actual performance identified in the PPMAP inspection results and NAVWAR HQ contracting workforce's valuations of the key process areas identified in the CMMM assessment (Rendon, 2016a).

One limitation of the CMMM assessment is that the results do not identify specific issues within each key process area of the contract life cycle phases. Instead, the CMMM assessment identifies broader areas of weaknesses in the processes. With this limitation, it is difficult to provide specific recommendations, so the recommendations in this research are rather broad in scope. To minimize this limitation, we have tried to find a pattern within the CMMM assessment results that aligns with their actual identified weaknesses from the PPMAP results. The PPMAP deficiencies contain detailed recommendations on how to correct specific issues identified from the inspection.

A second set of limitations of the CMMM results and this research is that the survey is completely voluntary for the NAVWAR HQ contracting workforce. Additionally, there is no way to extract untruthfulness from the CMMM assessment results. The researchers rely on complete honesty for each CMMM survey item.

D. SCOPE AND ORGANIZATION

The research concentrates on NAVWAR HQ's contract management process maturity throughout the contract life cycle phases and provides NAVWAR HQ a road map to process improvements. This research paper has five chapters.

Chapter I is the introduction and provides the background, purpose, research questions, benefits and limitations, scope and organization, and methodology used to conduct the research. Chapter II is the literature review and discusses auditability theory, the Contract Management Process, the CMMM, and the PPMAP. Chapter III is the NAVWAR overview. It discusses NAVWAR HQ, the contracting division within NAVWAR HQ, why NAVWAR HQ was selected, and the CMMM sample of selected participants for the survey. Chapter IV gives the findings and recommendations for process improvement. Chapter IV includes the CMMM data collected from the online survey, while also analyzing and interpreting the results. Additionally, Chapter IV compares the CMMM results with the PPMAP and identifies any patterns that exist between the CMMM assessments and inspection findings. Chapter V provides a summary overview, conclusion, and areas for further research.

E.   METHODOLOGY

In this report, we conduct a literature review on the theory that serves as the foundation for this research, which is auditability theory. We also discuss contract management processes as reflected in the *Contract Management Standard* (*CMS*; National Contract Management Association [NCMA], 2019), and we discuss approaches to assess contract management process capability. There is also an organization review to discuss NAVWAR. We deploy a survey, analyze the findings, and recommend contract management process improvement initiatives based on those findings.

F.   SUMMARY

This chapter discussed background information of the DOD contracting realm. It also described the report's purpose, research questions, scope and organization, and the methodology used. Chapter II contains literature reviews on auditability theory, contract management processes, the CMMM, and NAVWAR's PPMAP.

II. LITERATURE REVIEW

A. INTRODUCTION

As previously discussed, the purpose of this research is to conduct a contract management process maturity assessment on NAVWAR's contracting organization. Since we are focusing on processes, we first discuss auditability theory because capable processes are one of the components of auditability theory. After we discuss auditability theory, because we are discussing contracting processes, we then focus on the CMS, which is an industry-accredited, third-party standard for contract management processes (National Contract Management Association [NCMA], 2020). Because we are assessing contract management processes, we have a section that relates to the CMMM, which is an approach to assessing contract management process maturity. We first start with a discussion of auditability theory.

B. AUDITABILITY THEORY

Power (1996) conducted a study that introduced auditability theory. Power believed that a reliable audit "has the virtues of objectivity, publicity, and replicability" (p. 289). The author also explained that "auditability is a condition of possibility of all inspection and auditing practices and also a mode of organizational transformation" (Power, 2007, p. 14). This transformation happens when auditable documentation is developed and created through collected data procedures and processes within an organization (Power, 2007). Power emphasized the importance of "making things auditable, which requires organizations to establish and actively manage an institutionally acceptable knowledge management system supporting its governance of processes and practices" (Power, 1996, p. 289). Power argued, "The question is whether controls, measurement systems and their associated forms of documentation preexist the audit process or have been created with a view to making the organization auditable. ... In general, audit procedures, like any technique, demand the environments in which they can be perceived to succeed" (p. 295).

The exercise of auditability in public acquisition organizations plays a critical role in maintaining public trust and ensuring that taxpayer money is spent in a transparent, accountable, and reasonable manner that provides value in terms of required products and

services for the warfighters. Auditability helps verify that funds are spent in accordance with existing and applicable policies and regulations and that there is no evidence of fraud, waste, or abuse (Rendon & Rendon, 2015). Power (1996) contended, "The concepts of 'verifiability' and 'auditability' are widely regarded as synonymous" (p. 289). Power (1996) also argued that auditability depends on the organization's ability to develop and "establish an institutionally acceptable knowledge base and a system of process and practices that supports auditability" (Peters et al., 2019, p. 7).

Rendon and Rendon (2015) addressed auditability as a change within an organization when "organizations establish data collection practices and systems of documentation to make them auditable" (p. 713). They argued that organizations are more competent in identifying fraud, waste, and abuse when they exercise and perform effective auditability. Rendon and Rendon (2016) addressed auditability theory from the conceptual framework of the auditability triangle. The auditability triangle consists of three main elements: "competent personnel, capable processes, and effective internal controls" (Rendon & Rendon, 2015, p. 1). These three components are discussed in the next three sections.

1. Competent Personnel

Competent personnel is one component of the auditability triangle, which Rendon and Rendon (2015) defined as all those who have the "necessary education, training, and experience requirements for each functional area" (p. 716). Contracting personnel's education, training, and experience are critical in performing effective contract management duties. The DOD has lacked a skilled acquisition and contracting workforce since 2009 (GAO, 2019). GAO reports have identified different contracting challenges, including inadequate acquisition and contracting training (GAO, 2019). The GAO (2019) urged additional initiatives and steps toward improved training, retention, mentoring, and establishing best practices used by leading organizations. The competency of the contracting workforce starts with a good education, continuous training, and experience. As a result of deficiencies within contract management, the DOD centers their focus on individual competency development through adequate training in an effort to improve competencies within the contracting workforce (Rendon, 2015). Because of deficiencies within contract management, the "DOD is increasing its emphasis on developing its

contracting workforce competence through initiatives in education and training" (Rendon, 2015, p. 1482).

Many laws and regulations were created to mandate and manage the acquisition workforce training and education, such as the Defense Acquisition Workforce Improvement Act (DAWIA). Created in 1990, the law required the DOD to create and implement standard requirements for the acquisition workforce. In response, the DOD created the Defense Acquisition University (DAU). As an organization, the DAU manages DAWIA certifications and provides continuous training and education courses for both military personnel and civilians in 14 career fields (Defense Acquisition University [DAU], 2019). The DAWIA's goal is to provide a professional career path with clear core requirements for professional certification, including the right level of education and experience. The acquisition workforce needs to adapt to continuous changes in the acquisition and contracting environment and gain the appropriate knowledge and expertise to navigate through different layers of acquisition and contracting regulations, policies, and practices. The DAWIA's impact on the DOD's workforce competencies since its creation shows that the workforce was able to get more DOD-oriented training and education (GAO, 2019). The DOD has not, however, validated the expectation that the composition of the current workforce will meet the future DOD requirements (GAO, 2019).

The demand for more adequate, requisite skill sets of the acquisition workforce is increasing due to the complex environment of DOD acquisition. Skilled acquisition and contracting personnel are critical in maintaining military readiness, strengthening the DOD's buying power, and reducing cost overruns (GAO, 2019). Rendon (2010a) stated, "The DOD should consider combining some of the training and education provided to project managers and contracting officers, as well as consider integrating organizational structures and processes for managing both projects and contracts" (p. 27). According to Rendon,

> DOD acquisition leaders, along with members of Congress, have recognized the contributions of a competent workforce to defense acquisition effectiveness. In commenting on the cost, schedule, and performance shortfalls of defense weapon system programs, Michigan Senator Carl Levin stated the root cause of these and other problems in the defense acquisition system is our failure to maintain an acquisition

workforce with the resources and skills needed to manage the department's acquisition system. (Rendon, 2010b, p. 4)

The Section 809 Advisory Panel on Streamlining and Codifying Acquisition Regulations acknowledged, "As the rapid transformation of the defense acquisition system continues, DOD will require a professional, talented, experienced, flexible, and broad-minded workforce to succeed on warfighters' behalf. Career management is a critical element for the acquisition workforce" (Section 809 Panel, 2019, p. 19).

After developing a competent and knowledgeable acquisition workforce (AWF) that is well-educated, trained, and experienced in their areas, the organization must ensure that the AWF works together during the acquisition and contract management process. Congress directed the DOD to adopt third-party, industry-wide accredited standards as their competency framework for the AWF utilizing the National Defense Authorization Act (NDAA; NCMA, n.d.). An essential element in the AWF's ability to work in the process is effective internal controls, which is the second element of the auditability triangle and is discussed in the next section.

2.   Effective Internal Controls

"The internal controls aspect, in relation to auditability in organizations, refers to the objective of enforcing internal control policies to ensure compliance with laws and regulations, monitoring procedures to assess enforcement, and reporting material weaknesses" (Rendon & Rendon, 2015, p. 716). Rendon and Rendon (2015) mentioned internal controls being conversed through five internal control components that were created by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) and incorporated into the federal government. These five components of internal control are control environment, risk assessment, control activities, information and communication, and monitoring:

> The control environment, which sets the tone of an organization and is considered the foundational component, comprises management's commitment to ethical values, management's integrity, personnel policies, and organizational structure. Risk assessment, which involves evaluating the risks that could pose a threat to the organization's ability to achieve its goals, includes finding ways of mitigating the identified risks as well as assessing fraud risk. Information and communication, which encompasses the accounting information system as well as appropriate internal and

external communications, calls for accountability, integrity, and transparency throughout the organization. Control activities, which include the policies and procedures established by the organization to help ensure that management's directives to mitigate risks identified in risk assessment are enforced, entail such things as performance reviews, physical controls, technology controls, and segregation of duties. Monitoring activities, which is the process of assessing the quality of internal controls over time to make sure that the organization's goals and objectives are being met, entail making modifications or changes to control activities or procedures when warranted and feasible. (Rendon & Rendon, 2015, p. 717)

These five internal control components integrate with one another and establish the groundwork of an internal control system (Committee of Sponsoring Organizations of the Treadway Commission [COSO], 2013). Spillan and Ziemnowicz (2011) pointed out internal control weakness trends such as manipulation of public money, ethical standard violations, no internal controls, and the lack of management oversight within the organization.

3.   Capable Processes

Capable processes are those "processes by which procedures and routines, paradigms of auditability, become institutionalized as the public face of practice" (Power, 1996, p. 312). To create an effective contract, it is imperative that AWF use developed processes to generate successful and long-lasting contracts that do not require rework and are not embedded with fraud or improper auditing capabilities (Power, 1996). Having a mature contract management process set in place allows for fewer errors to be committed or found during the auditing process (Garrett & Rendon, 2015).

According to Rendon and Rendon (2015), "the capable process component of the auditability triangle reflects DOD contract management processes and related activities performed by the contracting workforce" (p. 754). Research confirms the connections among institutional structures, procedures, and the ability to deter fraud and corruption. As procurement agencies put forth their best efforts to maintain a level of high "accountability, integrity, and transparency" in their daily operations of procurement management, the importance of auditability will maintain an increased sense of importance (Rendon & Rendon, 2015, p. 726).

Power (1996) stated that, due to high levels of risk management, it is imperative that the support for the auditability of internal controls must remain at the forefront of contract management. Rendon and Rendon (2015) explained further: "An auditable organization is one that has integrity within their own organization, internal controls, and is readily available for review" (p. 713). When measuring process capabilities, they continue, "process capability is measured in terms of processes that are fully-established, institutionalized, mandated, integrated with other organizational processes, periodically measured, and continuously improved" (p. 716). They explain that procurement processes should be detailed, easily recognized, and incorporated in the activity (Rendon & Rendon, 2015). Our research can assist in providing the knowledge and best practices needed in public procurement agencies, allowing for an ability to ensure that competent people, effective controls, and capable processes are set in place as best practices (Rendon & Rendon, 2015).

Establishing capable processes and effective internal controls while having competent personnel execute an organization's operations allows for the development and execution of a standard set of contract management processes. When we talk about contract management processes, we talk about the CMS, which is discussed in the next section.

C. THE CONTRACT MANAGEMENT STANDARD

The CMS was created by the NCMA and accredited as an American National Standard (ANS) by the Board of Standards Review of the American National Standards Institute (ANSI) on April 22, 2019 (NCMA, n.d.). It is crucial for the buyers and sellers involved in DOD acquisition to have a standard set of contract management processes. The CMS is designed to "improve productivity, increase efficiency, and reduce costs" (NMCA, 2019, p. 2).

The five purposes of the CMS are:

- To define and standardize the term *contract management*
- To present and define the processes involved in all phases of the contract life cycle (pre-award, award, and post-award)
- To develop and perfect contract management practices, policies, and processes

- To inspire critical thinking and learning to bring efficiency to the contract management profession
- To be a constantly evolving document with a formal change process. (NCMA, n.d.)

The Contract Management Standard publication is divided into sections that are discussed in further detail in the upcoming subsections. As detailed in Figure 1, the CMS starts with a set of guiding principles: Skills and Roles, Contract Principles, Standards of Conduct, Regulatory Compliance, Situational Assessment, Team Dynamics, and Communication and Documentation (NCMA, 2019). The guiding principles are then followed by three phases of the contract life cycle: Pre-Award, Award, and Post-Award (NCMA, 2019). Each phase contains what the CMS describes as domains: Develop Solicitation, Develop Offer, Form Contract, Perform Contract, and Close Contract (NCMA, 2019). Competencies are embedded within each domain: Plan Solicitation, Request Offers, Plan Sales, Prepare Offer, Price or Cost Analysis, Plan Negotiations, Select Source, Manage Disagreements, Administer Contract, Ensure Quality, Manage Subcontracts, Manage Changes, and Close Out Contract (NCMA, 2019).
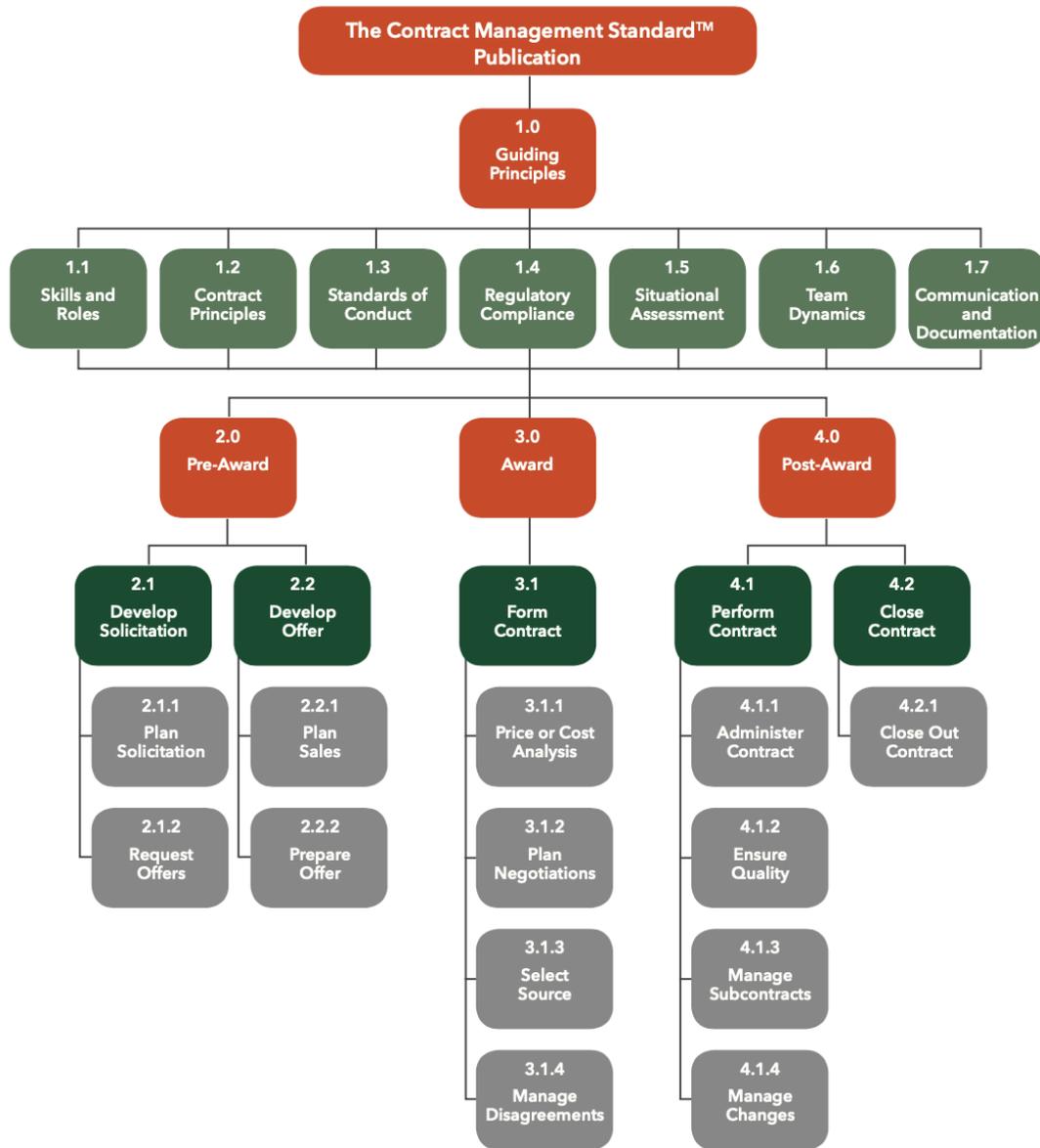
Figure 1.   The Contract Management Standard. Source: NCMA
(2019).

1.   **Guiding Principles**

Throughout the contract life cycle phases, contract management utilizes a set of seven guiding principles that are applicable regardless of fluctuations in urgencies, tactics, requirements, or resources (NCMA, 2019). Figure 2 highlights how these seven guiding principles apply to the pre-award, award, and post-award phases.
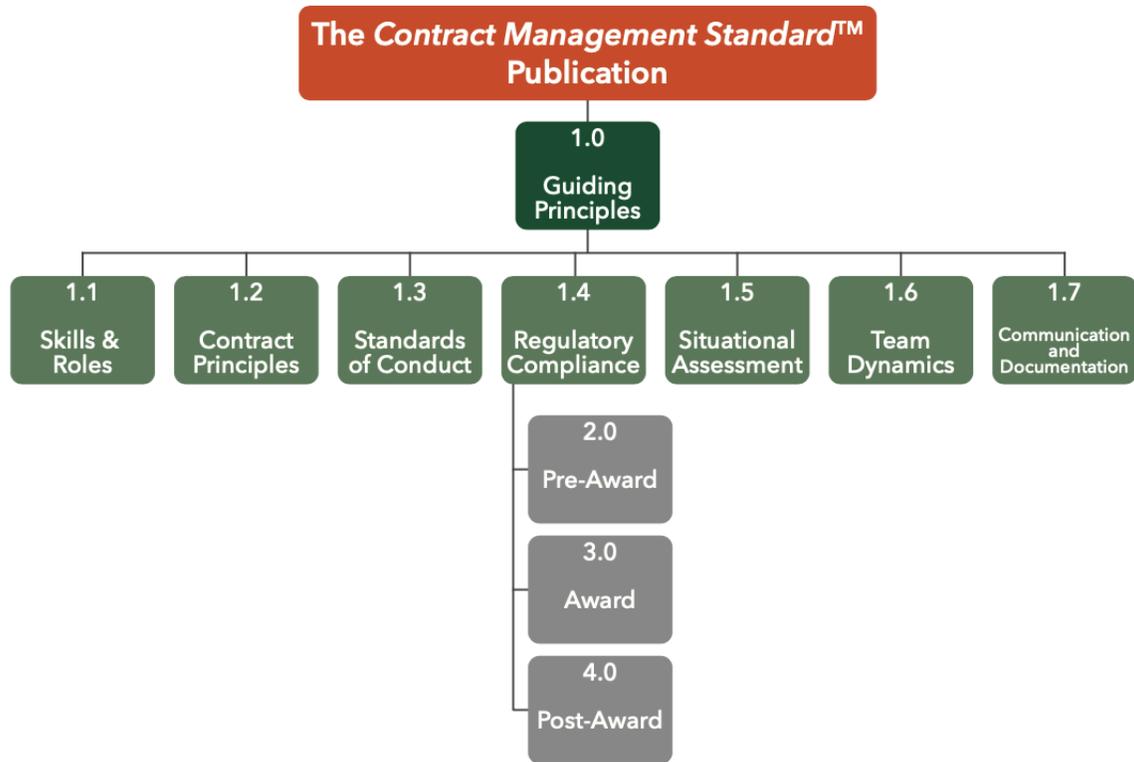
Figure 2.   Guiding Principles. Source: NCMA (2019).

a.   *Skills and Roles*

When dealing with contracts, contract managers have responsibilities that range from developing, organizing, and managing to the negotiation of contracts (NCMA, 2019). In addition to the contract manager's responsibilities, they should have the acquired skills that allow them to perform at a high degree when collaborating, communicating, thinking critically, leading, problem-solving, and getting satisfactory results (NCMA, 2019). Contract management also should be well versed in the areas of "business management, financial management, project management, risk management, and supply chain management" (NCMA, 2019, p. 5).

The CMS stresses that being an effective contract manager requires a comprehensive knowledge of all areas of the acquisition realm but also requires knowing what the primary functions are of the seller (NCMA, 2019). The buyer, normally the DOD, is an organization that requests a requirement, such as a good or service, to meet its purpose. The seller, normally a commercial contractor is the organization that is

contractually obligated to provide the buyer with their desires. Both the buyer and seller should be able to center their contract management skills around the requirement needed and provide each other the information that allows the requirement to be delivered in the most cost-effective manner (NCMA, 2019).

b.   Contract Principles

There are two categories that the contracting principles fall under:

- *General contracting concepts*—These include such notions as principal and agency, types of authority, essential elements of a contract, market research, competition, fair and reasonable prices, and ethics.
- *Terms and conditions to address specific contract matters*—These include the requirements and the rights and remedies of the parties in such areas as inspection and acceptance, title transfer, excusable delay, risk of loss, repudiation, warranties, payment terms, contract changes, and termination. (NCMA, 2019, p. 6)

c.   Standards of Conduct

Contracting managers are expected to perform their roles and responsibilities with sound ethical conduct, and the CMS's standards of conduct help better define what is proper ethical conduct (NCMA, 2019). When conduct is held to a high ethical standard, a climate of trust and integrity develops throughout the contract management process (NCMA, 2019).

d.   Regulatory Compliance

Rules and regulations dominate the contracting realm of DOD acquisition to ensure proper compliance is adhered to throughout the life cycle of each contract. Contracts are created and performed in accordance with established rules and regulations and adhere to the courts of law at all times (NCMA, 2019). Because contracts are legally binding and enforceable, contracting managers should have a thorough understanding of all the applicable laws, codes, regulations, and supplements involved in the contract management process (NCMA, 2019).

e. Situational Assessment

Organizations should provide contract management lessons learned to other organizations in an effort to improve the efficiency and effectiveness of managing contracts. As noted in the CMS, successful contracting managers

- Know how to capture, document, and share knowledge;
- Know how to shape and manage requirements to align with an organization's vision, mission, and strategic goals;
- Are aware of how seemingly independent contract actions impact each other now and in the future;
- Understand product and systems life cycle principles;
- Apply effective market research techniques to collect, analyze, and implement market intelligence;
- Identify opportunities for process improvement and optimization; and
- Negotiate meaningful contract terms and conditions while meeting customer needs. (NCMA, 2019, p. 7)

f. Team Dynamics

When a contract is executed, the buyer and seller enter into a relationship that requires integrity, compliance, and teamwork in order to be successful. A contract manager should understand the roles their co-workers play in the dynamic of the executed contract, such as engineering, finance, legal, logistics, requirement development, and supply chain management (NCMA, 2019).

g. Communication and Documentation

It is crucial to the contract management process that communication is free-flowing and available at all times. This allows for the maximum effectiveness in managing the contract. In an effort to communicate effectively, contract managers should establish written documentation that is clear and unambiguous (NCMA, 2019). The seller should be able to easily understand what is being asked of the buyer. In some instances, retained written documentation is used during fact-finding determinations and in the legal realm, so it is important for the contracting managers to be clear and precise in every written documentation presented to the other party.

It is crucial that these guiding principles for contract management are implemented and adhered to throughout each phase and domain of the contract's life cycle. The next section discusses the pre-award phase of the contract.

2. Pre-award Phase

The Pre-Award phase is the most important phase of the contract's life cycle. Numerous milestones and events occur in the pre-award phase that can have long-lasting consequences on overall performance effectiveness and the total life cycle cost of the contract. It is in the pre-award phase that the buyer helps with defining the requirement that the customer desires (NCMA, 2019). The buyer's responsibility in the pre-award phase is to develop the solicitation, while the seller's responsibility is to develop the offer (NCMA, 2019).

a. Develop Solicitation

Figure 3 shows that Develop Solicitation is within the buyer's domain. In this domain, the buyer informs the seller of all the elements pertaining to the customer requirements (NCMA, 2019). The buyer plans for the solicitation and requests offers to fulfill the customer's need.
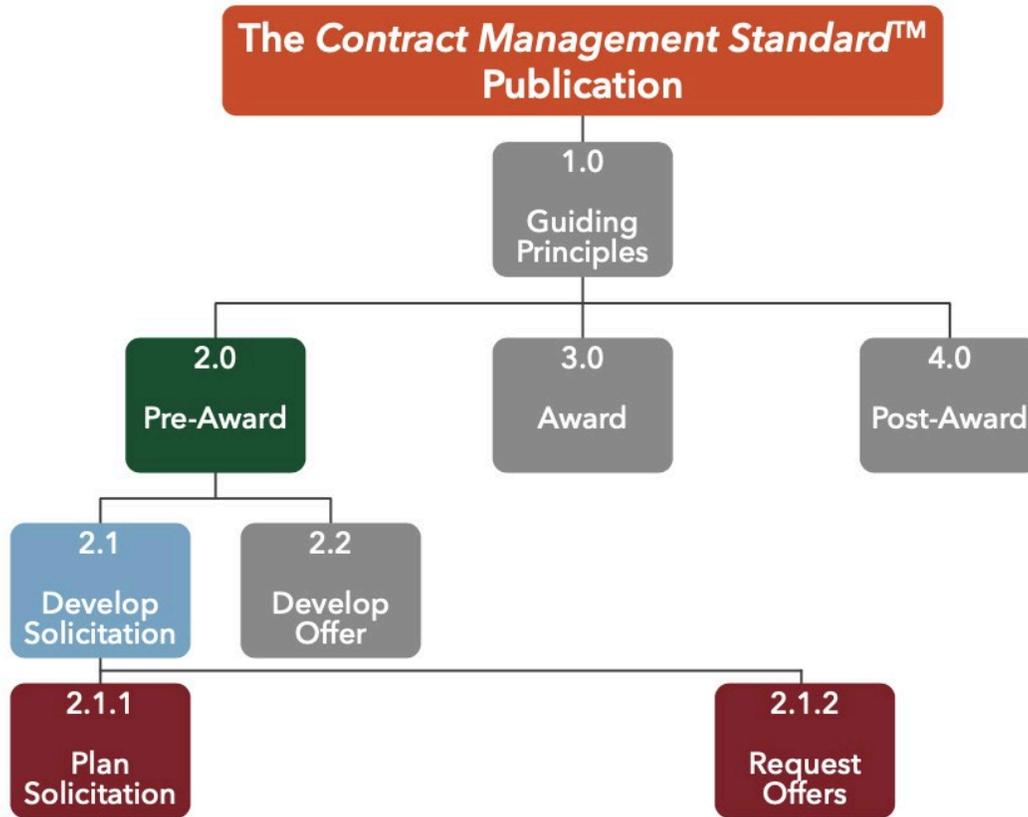
Figure 3.   Develop Solicitation. Source: NCMA (2019).

(1)   Plan Solicitation

NCMA (2019) describes *Plan Solicitation* as "the process by which efforts of all personnel responsible for acquiring goods or services are coordinated and integrated through a comprehensive plan for fulfilling the customer need in a timely manner at a reasonable cost" (p. 9). While planning the solicitation, the contracting managers are working on the requirements definition, performing research in the marketplace, ensuring proper risk analysis is conducted, and developing the contracting strategy (NCMA, 2019).

(2)   Request Offers

NCMA (2019) describes *Request Offers as* "the process of implementing the solicitation plan by soliciting responses from sellers in order to fulfill a customer need" (p. 9). When requesting offers, the contracting managers are ensuring that what they are asking for is clear and unambiguous. When the buyer has a clear understanding of the customer's

requirements, the buyer can then develop a clear plan and offer that aligns with providing services to meet the customer's needs.

b. *Develop Offer*

Figure 4 shows that Develop Offer, the second domain of the Pre-Award phase, is within the seller's domain and is primarily the responsibility of the seller (NCMA, 2019). It involves the development of business practices and strategies that will help enhance and establish a foundation for business competitiveness in the marketplace (NCMA, 2019). This process assists the seller in successfully responding to the solicitations requirement with the intent of winning the contracts and executing them according to contract performance and schedule requirements (NCMA, 2019). It allows the seller to provide and deliver customer value. The Develop Offer domain contains two subsections: Plan Sales and Prepare Offer (NCMA, 2019).
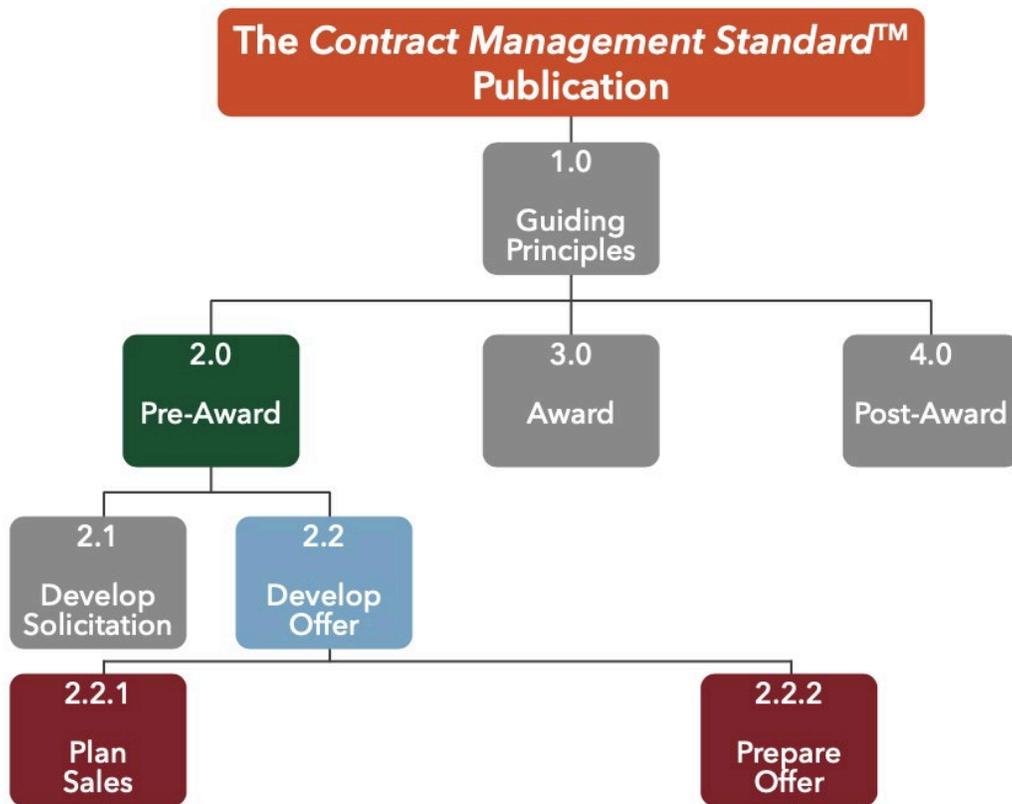
Figure 4.   Develop Offer. Source: NCMA (2019).

(1)   Plan Sales

The Plan Sales competency is the process of establishing customer relations and developing an effective business strategy that focuses on assessing the marketplace and competition (NCMA, 2019). The value added from this step is the seller's close attention and understanding of the buyer's short- and long-term requirements and determination of the business capability to respond to a solicitation (NCMA, 2019).

(2)   Prepare Offer

The Prepare Offer competency focuses on developing a winning strategy that will allow the seller to successfully respond to a solicitation and enhance the business competitiveness in the marketplace (NCMA, 2019). Preparing the offer is the business capability to successfully execute the sales plan and develop an offer to win business (NCMA, 2019). The value added from this step is exploiting and amplifying the business strengths and efficiencies with a goal to increase marketplace positioning (NCMA, 2019).

3.   Award Phase

The Award phase is the second phase of the contract life cycle. This phase has one contract management domain: Form Contract (NCMA, 2019). In this phase, both the buyer and seller perform different tasks and work to award a contract (NCMA, 2019).

During this phase, the buyer tasks are as follows:

- Evaluate all submitted offers.
- Conduct and engage in negotiations.
- Select the adequate source that meets the solicitation requirements and established selection criteria.
- Award the contract(s).
- Debrief offerors when applicable.
- Address mistakes in offers and seller challenges to the selection process. (NCMA, 2019)

The seller tasks in this phase are as follows:

- Clarify offers.
- Participate and engage in negotiations.
- Prepare and submit final offers. (NCMA, 2019)

a.   *Form Contract*

Figure 5 shows that Form Contract is the Award phase's only domain. The objectives of the Form Contract domain are to determine whether the cost and price offered by the seller are fair and reasonable, conduct and engage in negotiation to obtain the best value continuum, select the right and appropriate source in accordance with selection criteria, and manage any protest and disagreements (NCMA, 2019). The Form Contract domain includes four subdomains: Price or Cost Analysis, Plan Negotiations, Select Source, and Manage Disagreements (NCMA, 2019).
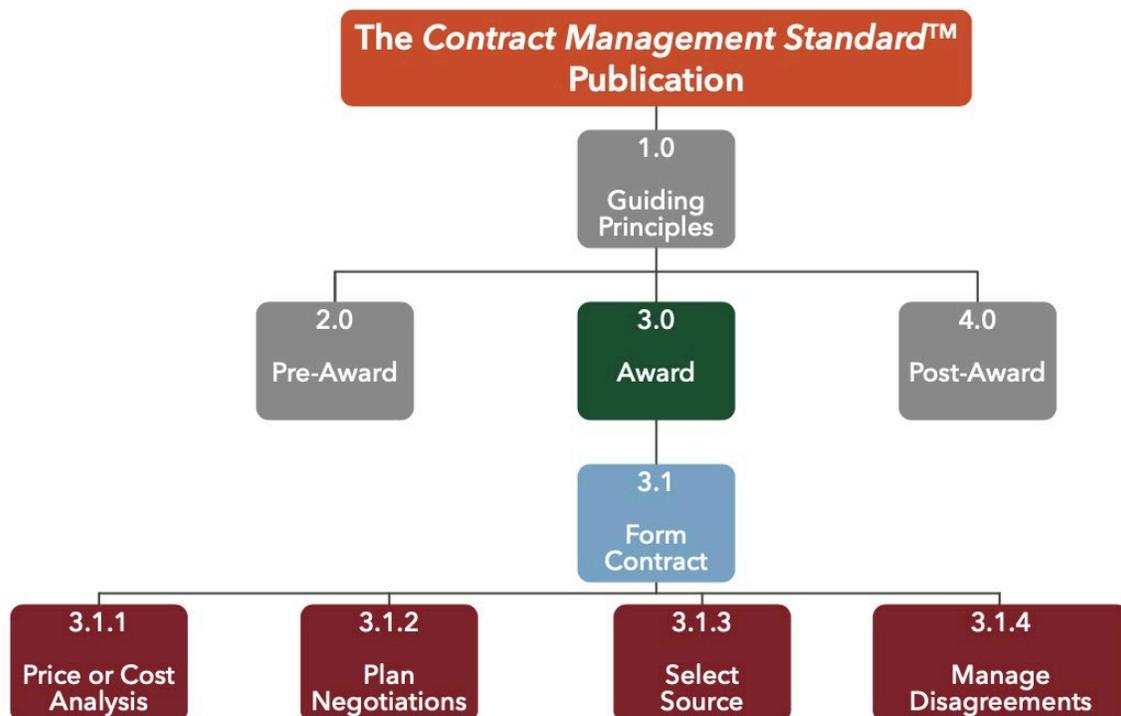

Figure 5.   Form Contract. Source: NCMA (2019).

(1)   Price or Cost Analysis

The determination of fair and reasonable prices is one of the primary and most important tasks of contracting managers when negotiating contracts (NCMA, 2019). Price analysis and cost analysis are the two techniques used to determine a fair and reasonable price for both the buyer and the seller (NCMA, 2019).

Price Analysis is determining price reasonableness and fairness by evaluating the seller proposed price through examination of comparative, published, and historical prices; competitive analysis; and comparison of market data without analyzing detailed cost elements (NCMA, 2019).

Cost Analysis consists of examining and assessing detailed cost elements, profits, and fees in the seller's proposal to determine cost realism and fair and reasonable prices (NCMA, 2019). The seller provides certified cost data that the buyer uses to decide on reasonableness. This process adds value by ensuring that the buyer takes the required steps toward a determination of the price fairness, reasonableness, and realism in preparation for negotiations and by reducing the risk in contract performance (NCMA, 2019).

(2)   Plan Negotiations

Plan Negotiations describes a process of interaction and communication where the buyers and sellers negotiate different aspects of the offer and its conditions and terms (NCMA, 2019). Negotiations may require clarifying the agency requirements, making changes, and granting considerations for alternative approaches. According to the CMS, both parties are responsible for documenting negotiation objectives and conducting discussion when applicable and required. The CMS suggests that the value added in this process is the clear and common understanding and acknowledgment of the agency requirements from the seller and the buyer. This process focuses on the willingness of both parties to find a compromise and work together toward a common goal of fairness and reasonableness of the price and the terms and conditions of the contract (NCMA, 2019).

(3)   Select Source

Select Source refers to the process of determining which seller will win the contract. This process involves examining and evaluating all submitted offers in accordance with evaluation criteria already established and published in the solicitation (NCMA, 2019). The methods and techniques used in source selection differ depending on the complexity and cost of the contract. The goal of this process is to select the most appropriate and best-qualified source that has the highest chance of successfully performing the contract in

accordance with its terms and conditions (NCMA, 2019). Some other job tasks that are completed during this process include the following:

- The buyer reviews the sellers' proposals for compliance.
- The sellers and the buyer conduct discussions or final negotiations.
- The buyer requests final proposals from sellers.
- The sellers prepare final proposals.
- The buyer prepares and finalizes the contract award. (NCMA, 2019)

The value added by this process is that it reduces or eliminates the risk of contract performance and ensures a fair, transparent, and consistent selection process (NCMA, 2019).

(4) Manage Disagreements

Manage Disagreements consists of managing and maintaining legal conformity. This process focuses on resolving disagreements and conflicts between both parties, including buyers and any actual or potential contractors (NCMA, 2019). The job tasks in this subdomain are to submit protests and appeals by the sellers and to respond to these protests and appeals by the buyers (NCMA, 2019). This process adds value by providing the ability to address and resolve solicitation and source selection process conflicts via formal and informal means (NCMA, 2019).

4. **Post-award Phase**

Contract administration and closeout are the necessary requirements to conclude the Post-Award phase. The buyer and seller are heavily engaged in processing and implementing best practices in the administration of the contract (NCMA, 2019). The Post-Award contract life cycle phase begins upon completion of the Award phase. Depending on the density of the contract, the Post-Award phase may produce additional hurdles to overcome while completing contract administration (NCMA, 2019). Constant and effective communication guarantees acceptable implementation of the Post-Award phase (NCMA, 2019).

Buyers have the responsibility of assessing risk and ensuring that problems are solved efficiently when dealing with contract performance (NCMA, 2019). The evaluation and implementation of modifications to the contract during closeout is key and needs

thorough attention (NCMA, 2019). Buyers must also ensure standards are compliant, payments are made, and administrative technicalities are resolved (NCMA, 2019). Sellers' job tasks include "contract performance, invoicing, engaging in subcontracting activities, managing contract changes, and bringing the contract to a successful conclusion" (NCMA, 2019, p. 16).

Within the Post-Award phase there lie two domains: Perform Contract and Close Contract. The necessary tasks that are required in order to administer and close out a quality contract are broken down by domain.

a. *Perform Contract*

Figure 6 breaks down the tasks, competencies, and performances associated with the Perform Contract domain (NCMA, 2019). In addition, the Perform Contract domain can be used to verify best practices are conducted to the completion of a contract (NCMA, 2019). "*Perform Contract* is the process of executing contract requirements, managing business relationships, ensuring quality, and managing changes" (NCMA, 2019, p. 16).

The value added by this process is in

- Monitoring risk and assessing its impact on contract performance, and
- Ensuring compliance with contractual terms and conditions and contract technical requirements during contract performance up to contract closeout or termination. (NCMA, 2019, p. 16)
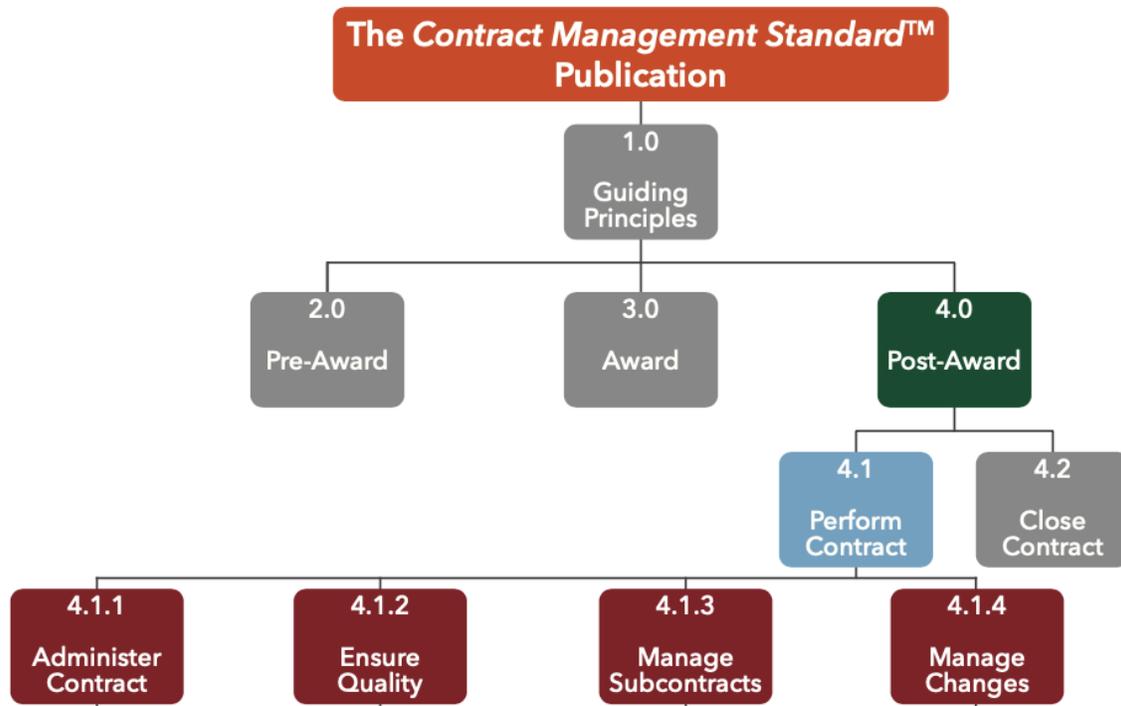
Figure 6.   Perform Contract. Source: NCMA (2019).

(1)   Administer Contract

According to the CMS, Administer Contract is the process of

- Confirming expectations
- Maintaining communication channels
- Processing contract documentation
- Conducting post-award performance reviews
- Assessing contract performance. (NCMA, 2019, p. 16)

Managing risk and verifying the opportunity for an acceptable contract is the value added during the Administer Contract process (NCMA, 2019).

(2)   Ensure Quality

Ensure Quality is the process of preparing the planning for effective review of the contract execution, distribution, observation, and reviewing and acknowledging contract performance (NCMA, 2019). Meeting the expectation for delivered goods and the terms and conditions of the contract is the significance of this process (NCMA, 2019).

(3)   Manage Subcontracts

Manage Subcontracts is the responsibility of the prime contractor. Managing subcontracts is important because it ensures that contracts are falling within government regulations (NCMA, 2019). Having a point of contact for subcontracts is key in streamlining the process when problems arise (NCMA, 2019). The point of contact is responsible for "subcontract award, technical and financial performance, monitoring performance, and payment to the subcontractors and suppliers for the work accomplished under subcontract terms" (NCMA, 2019, p. 17).

(4)   Manage Changes

According to the CMS, Manage Changes is the process of "initiating, considering, negotiating and issuing contract modifications" (NCMA, 2019, p. 17). This process keeps a close eye on additional modifications made to current and future contracts (NCMA, 2019). This process adds the value of protecting the integrity and flexibility of a contract (NCMA, 2019).

b.   Close Contract

Figure 7 shows the Close Contract domain, which is the responsibility of both the seller and the buyer and involves the verification of contract requirements being met before closeout (NCMA, 2019). Any unsettled problems are addressed in this domain along with ensuring final payments have been made before closeout.
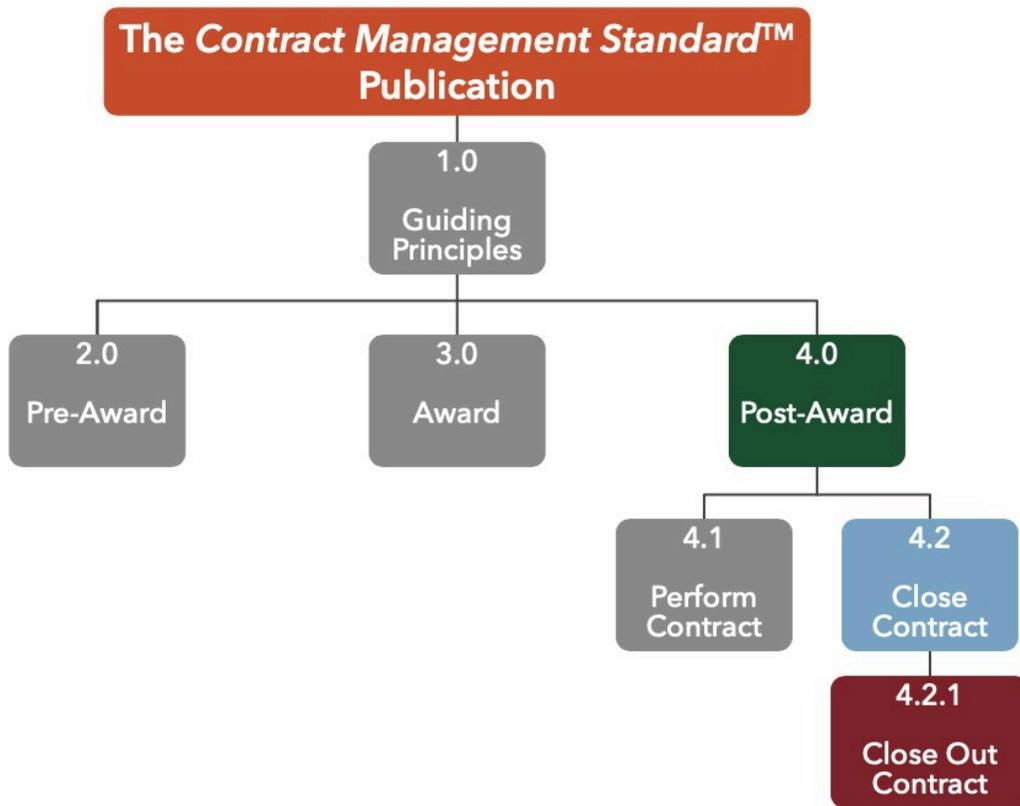
Figure 7. Close Contract. Source: NCMA (2019).

(1) Close Out Contract

Close Out Contract is the final process of the contract life cycle. Within this process, buyers and sellers must ensure that all final aspects of the contract are complete. In the CMS, the elements required for review are as follows:

- All performance has been accomplished
- Final contractor performance has been evaluated
- Final payment has been made
- Contract has been reconciled. (NCMA, 2019, p. 19)

When all parties are satisfied with the conclusion of the contract, and it has been reconciled, value is added to the Close Contract domain (NCMA, 2019).

In summary, the CMS provides a standard set of contract management processes that improve productivity, increase efficiency, and reduce costs (NCMA, 2019). NCMA describes the CMS as the solution to the DOD's contracting problem:

Contract management is a very diverse and dynamic profession. Even with significant deliverables (e.g., solicitation, offer, contract, performance, and closeout), contract management terminology, practices, policies, and processes can vary greatly from one organization to another. The CMS publication provides stability by integrating and standardizing the common job tasks and competencies that produce significant contract management deliverables.

While organizations must establish their own practices, policies, and processes to meet their goals, the terminology used and the interpretation of practices, policies, and processes should be intuitive to all contract managers. When contract management terminology, practices, policies, and processes are interpreted consistently, the likelihood of reaching agreement on matters relating to contract intent and interpretation is increased. Consistent application of professional standards also enables successful contract performance across diverse industries and types of organizations. (NCMA, n.d.)

Congress directed the DOD to adopt third-party, accredited industry standards for each of its acquisition career field competency frameworks. The DOD has selected the CMS as the competency framework for the DOD contracting community (Herrington, 2020).

We discussed that capable processes are a component of auditability theory and that contracting processes are reflected in the CMS, but how can organizations assess their contract management process capability? The use of the Contract Management Maturity Model (CMMM) can assist in assessing contract management process capability, which is discussed in the next section.

D. CONTRACT MANAGEMENT MATURITY MODEL

The CMMM is based on best practices identified in industry and government for each of the six phases of the contract management process. CMMM is a tool used to establish a success concept level. The CMMM provides a tool to assist contract management in providing buyers and sellers to excel in important levels of contracting process improvements (Rendon, 2008). The CMMM presents contracting managers the baseline needed to further improve the organization's level of performance (Rendon, 2008). The CMMM should be used as a foundational piece to promote further conversation and to mold successful contract management organizations while developing sound contracts. According to Rendon (2008), "the CMMM provides a visual tool to help

organizations assess the six major steps they must accomplish when either buying or selling products, services, and integrated solutions, in either the public or private business sectors" (p. 293). The maturity levels enable managers to gauge where their organization stands in relation to the model for buyer and seller procedures (Rendon, 2008). This section explains how the CMMM may be incorporated into an organization to allow for a closer look into best practices and ways to provide effective measures to increase an organization's contract management processes. We discuss the contract management key process areas: Procurement Planning, Solicitation Planning, Solicitation, Source Selection, Contract Administration, and Contract Closeout. Then we discuss the five levels of maturity: ad hoc, basic, structured, integrated, and optimized.

1. Contract Management Key Process Areas

a. *Procurement Planning*

According to Rendon and Rendon (2015), Procurement Planning "is the process of identifying which organizational needs can best be met by procuring products or services outside the organization" and "determining whether to procure, how to procure, what to procure, how much to procure and when to procure" (p.756). Procurement planning is integral because it is the starting process of forming a solid contract and requires a high level of attention to detail to streamline the process. An organization requires a clear understanding of the "scope of work or description" in relation to what a buyer or seller requires (Garrett & Rendon, 2006, p. 305). When establishing the scope of work, there are numerous parties involved to certify the reliability of the request and justify its validity, specifically "representatives from procurement, program management, technical, and other affected functional areas" (Garrett & Rendon, 2006, p. 306). A list of necessary requirements to ensure that procurement planning encompasses the necessary visibility to promote best practices follows:

- Obtain sufficient resources.
- Consider other program team areas.
- Integrate assessment of contract type selection, risk management, and contract terms and conditions.
- Document the acquisition management plan.
- Describe requirements in sufficient detail for the statement of work. (Garrett & Rendon, 2006, p. 305)

b.   *Solicitation Planning*

According to Rendon and Rendon (2015), Solicitation Planning "is the process of preparing the documents...needed to support the solicitation and procurement" (p. 756). This process requires careful management of documentation, and contract managers must pay particular attention that requirements and requested resources are well-known. When verifying solicitation planning, the following listing is critical to ensure that documentation is completed correctly and in a timely manner:

- Use standard procurement forms and documents.
- Use incorporated automated and paperless processes.
- Obtain adequate resources, internally or externally.
- Structure solicitations to facilitate accurate and complete responses from prospective contractors.
- Ensure consistent responses are rigorous.
- Consider flexibility for contractor suggestions.
- Establish evaluation criteria consistent with acquisition strategy.
- Allow for amendments to documents before issuing the solicitation. (Garrett & Rendon, 2006, p. 305)

c.   *Solicitation*

Solicitation is the art of getting "quotations, bids, offers, or proposals" (Garrett & Rendon, 2006, p. 304). Within the solicitation process, an organization must ensure that a competent list of bidders is available that will provide information on possible sellers. The information entailed includes the level of experience, scope of practice, and additional information that may assist a buyer in selecting the best proposals (Garrett & Rendon, 2006). The following occur in the solicitation key process area:

- Conduct market research and advertising to identify new sources.
- Ensure common understanding of requirements for potential pre-solicitation or a pre-bid conference.
- Obtain inputs from industry to develop solicitations for certain procurements.
- Use paperless process issuing solicitations and receiving proposals. (Garrett & Rendon, 2006, p. 305)

d.   *Source Selection*

Source Selection is the process of selecting potential offerors. This process must be carefully monitored because offerors will be contacted, and outside factors come into play

at the start of this procedure (Rendon, 2008). "The organization uses evaluation criteria, evaluation standards, and a weighting system to evaluate proposals" (Garrett & Rendon, 2006, p. 305). Valuation standards for choosing a contractor is the lowest cost or technically acceptable offer (Rendon, 2008). The following occur during source selection:

- Focus on management criteria, technical criteria, and price criteria.
- Compare price proposals against the organization's independent cost estimate.
- Review contractor's past performance on previously awarded contracts.
- Conduct a pre-award survey on the potential contractor if necessary.
- Debrief to awarded and unawarded contractors. (Garrett & Rendon, 2006, p. 305)

e. Contract Administration

Contract Administration includes executing the legal contract to ensure "each party's performance meets contractual requirements" (Rendon, 2008, p. 208). Contract administration is important because relationships that are made during this process may potentially become lifelong if all parties are in agreement. The following occurs during contract administration:

- Assign contracts to individuals or teams for managing the post-award phase.
- Use team approach for monitoring the contractor's performance to ensure implementation of duties.
- Confirm established process for controlling and managing contract changes.
- Validate established process for managing contractor invoices and payments.
- Verify recognized process for managing contract incentive fee and award fee provisions.
- Ensure a formed method for doing intermittent and combined cost, and performance evaluations.
- Encourage contract disagreements to be settled using alternate disputer solution methods.
- Verify process for maintaining a copy of contracts. (Garrett & Rendon, 2006, p. 305)

f. Contract Closeout

Contract Closeout is the final phase of the contract management process. Contract closeout includes finalizing, resolving, and maintaining the final phase of the contract,

including the proper closeout of all remaining outstanding actions documented on the contract (Rendon, 2008). The following occurs during contract closeout:

- Verify established process for closing out contracts.
- Ensure proper documentation of closed-out contracts.
- Obtain the seller's release of claims and final payment.
- Provide a written or oral notification to terminate contracts due to cause or default.
- Maintain a lessons-learned and best-practices database for future contracts. (Garrett & Rendon, 2006, p. 305)

2. Five Levels of Maturity

The CMMM allows for contract managers to mature their understanding within contract management processes so their organization can conduct best practices when handling contracts. Garrett and Rendon (2006) stated,

> The CMMM creates a vision of excellence to help buying and selling organizations focus on the key areas of process improvement. CMMM provides its user with a framework or a guide for improving their respective level of performance. The CMMM provides a visual tool to help organizations assess the five levels of maturity they must accomplish when either buying or selling products, services, and integrated solutions, in either the public or private business sectors. The maturity levels reflected in the model allow an organization to assess its level of capability for each of the five levels of maturity in its respective buying or selling process. (Garrett, & Rendon, 2006, p. 293)

The CMMM is a "model and survey assessment tool" that serves "as the foundation for ongoing discussion and further development within the contract management profession" (Garrett & Rendon, 2006, p. 293). The subsequent sections provide brief descriptions of each level of maturity.

a. Level 1 Ad Hoc

Within Level 1, contracting organizations' process maturity is at the lowest levels of acceptance, but the organizations still recognize the existence of these processes. Some of these processes are being accepted, understood and performed within several businesses in both public and private sectors (Rendon, 2008). The following key process areas operate at an *ad hoc* level:

- Contract management processes and standards are used only on an ad hoc and inconsistent basis.
- Documentation of any contract management processes is ad hoc and inconsistent throughout the organization.
- Managers and contract management personnel are not held to any specific accountability for complying with any contract management process standards. (Garrett & Rendon, 2006, p. 298)

b.   Level 2 Basic

Within Level 2, contracting organizations have established a basic understanding of contract management but typically use them only during more multifaceted and elaborate contracts where attention to detail is imperative and particular dollar levels are met (Rendon, 2008). There are several key process areas identified as operating at a *basic* level:

- Some documentation exists on these basic contract management processes.
- Basic contract management processes are not considered an organizational standard.
- There is no organizational mandate to use these basic contract management processes. (Garrett & Rendon, 2006, p. 298)

c.   Level 3 Structured

Within Level 3, contract management processes in organizations are well established, incorporated, and directed throughout the contracting life cycle (Rendon, 2008). The key process areas identified as operating at a *structured* level include the following:

- Formal documentation has been developed for these standardized contract management processes, and some processes are even automated.
- Procurement processes are tailorable for each specific procurement, allowing consideration for the unique aspects of each procurement.
- Senior management is involved in providing input and approving key procurement decisions and documents. (Garrett & Rendon, 2006, p. 298)

d.   Level 4 Integrated

Within Level 4, contracting organizations are fully integrated within the contracting processes. Management within financial, schedule, performance, and system engineering

are key processes where Level 4 maturity excels (Rendon, 2008). There are several key process areas identified as operating at an *integrated* level:

- 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.
- Management uses efficiency and effectiveness metrics to make procurement-related decisions.
- Management understands its role in the procurement management process and executes. (Garrett & Rendon 2006, p. 298)

e. Level 5 Optimized

Within Level 5, contracting organizations are at the highest level of maturity, where continuous process improvement and best practices are systematically incorporated into the contract management process by providing the greatest level of visibility and lessons learned to improve contract management (Rendon, 2008). The following key process areas operate at an *optimized* level:

- Contract management processes are evaluated periodically using efficiency and effectiveness metrics.
- Best practice programs are implemented to improve contract management processes, standards, and documentation.
- Procurement process streamlining initiatives are implemented as part of the process improvement program. (Garrett & Rendon, 2006, p. 298)

The CMMM assesses the five levels of maturity, allowing a contract management organization to discern where they are situated within the greater picture of contract management processes (Rendon, 2008). In addition, the CMMM provides a solid baseline for identifying where an organization requires additional assistance to increase its level of maturity along the scale of the CMMM (Rendon, 2008).

Past research on assessing DOD contracting organizations using the CMMM consistently found that post-award contract management key process areas have a lower level of process capability than pre-award contract management key process areas. This finding is consistent across DOD agencies such as NAVSUP, NAVSEA, NAVAIR, Naval Facilities Engineering Command, and Air Force Nuclear Weapons Center (Rendon, 2015).

The CMMM is based on best practices identified in industry and government for each of the six phases of the contract management process. Government agencies also use an assessment tool that is based on compliance with the Federal Acquisition Regulation (FAR), Defense Federal Acquisition Regulation Supplement (DFARS), and Navy Marine Corps Acquisition Regulation Supplement (NMCARS). An example of that assessment tool is the Procurement Performance Management Assessment Program (PPMAP) used by the Navy, which we discuss in the next section.

E. PROCUREMENT PERFORMANCE MANAGEMENT ASSESSMENT PROGRAM

The secretary of the Navy (SECNAV) issued "guidance and mechanisms for each Head of Contracting Activity (HCA) in executing oversight and review responsibilities of subordinate contracting organizations with the objective of minimizing vulnerabilities to fraud, waste, and abuse while balancing risk" (Office of the Secretary of the Navy [SECNAV], 2019, p. 1). Through the SECNAV's guidance, the PPMAP was proposed. The PPMAP was designed to create internal audit controls on the procurement processes within Department of the Navy (DON) contracting organizations. According to Deputy Assistant Secretary of the Navy for Acquisition and Procurement (DASN[AP]) Cindy Shaver, "the DASN(AP) relies on the PPMAP as its primary method to validate the extent of sound contracting practices that occur within the DON" (Shaver, 2019b, p. 1).

The PPMAP requires

- DON HCAs to perform periodic self-assessments of critical procurement processes used to manage and execute procurement operations, performance-based metrics, and employee/customer surveys, and to use the outcomes of these assessments to continually improve procurement operations.
- DASN(AP) to assess procurement performance by the DON HCAs and for HCAs to perform reviews of all subordinate contracting organizations/field activities and other offices with delegated procurement authority, at least every 36 months.
- Assignment of an adjectival rating of *Highly Satisfactory, Satisfactory, Marginal,* or *Unsatisfactory,* as applicable, upon conclusion of a PPMAP review of a contracting activity, subordinate contracting organization, or field activity with delegated procurement authority (Shaver, 2019a), p. 1.

In this section, we discuss the PPMAP program objectives, PPMAP assessment factors, and the PPMAP assessment ratings.

1. PPMAP Program Objectives

a. *Primary Objectives*

The primary objectives of the PPMAP are as follows:

- To encourage and assist contracting organizations in making continuous improvements in all phases of their acquisition processes to ensure compliance;
- To provide a feedback system to contracting organizations, addressing strengths, material weaknesses, deficiencies, and significant findings;
- To increase/decrease the level of oversight provided based upon a contracting organization's proficiency, quality, and business considerations; and
- To leverage best practices/processes and "lessons learned" across the spectrum of DON contracting activities. (SECNAV, 2019, Enclosure 1)

b. *Warrant File Review*

The assistant secretary of the Navy for research, development and acquisition (ASN[RD&A]) requires the HCA to perform annual record audits on issued warrants to "ensure all warrant holders and acquisition certified professionals maintain eligibility and meet skills currency requirements" (SECNAV, 2019, Enclosure 1). These results are provided to the DASN(AP) in the HCA's annual self-assessment (SECNAV, 2019). The PPMAP reviews the HCA-issued contracting officer warrants to verify that contracting activities' effectiveness are maintaining up-to-date warrants for their contracting personnel (SECNAV, 2019).

c. *Acquisition Staffing Analysis and Validation*

The commanding officer of the organization is effectively responsible for making sure that an organization's staff are capable of executing their acquisition contracting mission (SECNAV, 2019). Because the commanding officers are required to assess the workload of their contracting team, it is important for the contracting managers to have easy access to their commanding officers on a consistent basis (SECNAV, 2019).

The commanding officers should also ensure there is ample time given to provide quality training and opportunities to their contracting team members. The PPMAP reviews the organization's training schedule, reports the findings, and provides recommendations for training and modifications to how the contracting team is structured (SECNAV, 2019).

d. Contract Review Board

A contract review board (CRB) is "an internal control mechanism that consists of a review board that meets on an as-needed basis to review and monitor contract actions to ensure compliance with acquisition policies, procedures and regulations and to ensure that contracting decisions reflect sound business judgment" (SECNAV, 2019, Enclosure 1). The HCA authorizes a CRB to meet before and after negotiations when reviewing acquisitions that are either complex or high in dollar value (SECNAV, 2019). A CRB conducts their operations based off established procedures issued by the CRB chairperson (SECNAV, 2019). Examples of documents the CRB reviews are "modifications, change orders, progress payments, exercises of options, and final contracting officer decisions on all disputes" (SECNAV, 2019, Enclosure 1).

2. PPMAP Principal Assessment Factors

The PPMAP is an evaluation tool that allows us to assess and measure the effectiveness and quality of the contracting and procurement processes, management and internal control systems, and other means used by the HCA to carry out the delegated procurement and contracting authority per the applicable laws, regulations, and policies (Shaver, 2019b). The PPMAP focuses on introducing measures and actions to be taken to improve the quality of procurement processes, identifying the best practices across the organization, and reducing the risk of vulnerabilities for waste, fraud, and abuse (Shaver, 2019b).

As shown in Figure 8, PPMAP assessments and reviews consist of three assessment factors: Organizational Leadership, Management Control and Internal Controls, and Regulatory Compliance (Shaver, 2019b).

PRINCIPAL ASSESSMENT FACTORS	
PRINCIPAL ASSESSMENT FACTOR I - Organizational Leadership	
Review Element A:	*Tone from the Top*
Review Element B:	*Organization and Function*
	1) *DoN Contracting Activity Responsibilities*
	2) *Contracting Organization Leadership*
	3) *Contracting Organization Strategic Planning*
	4) *Contracting Organization Customer/Supplier Focus*
	5) *Contracting Human Resource (HR) Management*
Review Element C:	*Implementation of the DoN Small Business (SB)Program*
PRINCIPAL ASSESSMENT FACTOR II - Management Controls and Internal Controls	
Review Element A:	*Warrant File Review*
Review Element B:	*Contract Review Board (CRB)*
Review Element C:	*Management of Key Procurement Processes*
	1) *Command Selected*
	2) *Command Selected*
	3) *Command Selected*
	4) *Command Selected*
	5) *Command Selected*
	6) *Command Selected*
	7) *Command Selected*
	8) *Command Selected*
Review Element D:	*Special Interest Items (SIIs)*
	1) *Compliance with FAR/DFARS/NMCARS*
	2) *Designation/Management of Contracting Officer's Representatives (CORs)*
	3) *Contracting Officer Representative Tracking (CORT) Tool*
	4) *Government-wide Commercial Purchase Card (GCPC)*
	5) *Management of Government Furnished Property (GFP)*
	6) *eBusiness Data Metrics*
	7) *Service Requirements Review Board (SRRB)*
	8) *Labor Law*
	9) *Peer Review*
	10) *Contract Audit Follow-up (CAFU)*
	11) *Legal*
Review Element E:	*Implementation and Execution of the PPMAP*
PRINCIPAL ASSESSMENT FACTOR III – Regulatory Compliance	

Figure 8. PPMAP's Principal Assessment Factors. Source: DASN(AP) (2019b).

a. *Organizational Leadership*

The Organizational Leadership assessment factor examines the actions and assesses the responsibilities of the senior leaders at the contracting activities to fulfill agency procurement needs. The focus of this assessment factor is to evaluate three areas: tone from the top, organization and function, and implementation of the Department of the Navy (DON) Small Business Programs (Shaver, 2019b).

"Tone from the top" consists of strong ethical leadership and proper guidance from the top on how to utilize contracting principles and adequate resources to provide the

sufficient contracting capability required to support the naval forces while reducing the risk of fraud, waste, and abuse (Shaver, 2019b). The HCA must use good and informed judgment when applying contracting principles in different situations. The balance between mission accomplishment and oversight responsibilities is an optimal goal that should be achieved through active and continuous communication between HCAs and the DON to convey, consider, and resolve any strategic and systemic problems and concerns (SECNAV, 2019). The leadership plays a vital role in fostering and promoting innovation and continuous improvement processes in procurement performance while ensuring compliance with contracting practices.

The leadership assessment factor also focuses on organization and function elements. This element evaluates these specific areas: DON contracting activity responsibilities, contracting organization leadership, contracting organization strategic planning, contracting organization customer/supplier focus, and contracting human resource management (Shaver, 2019b).

The assessment of the contracting activity's responsibilities helps examine the effectiveness of the organization in managing the acquisition and procurement function across the entire command and helps evaluate how well the procurement actions are in alignment with the command's strategic plan and objectives (Shaver, 2019b). It provides an opportunity to gain a general understanding of the contracting activity's "acquisition mission, roles, responsibilities, organizational structure, and staffing" (Shaver, 2019b, p 14).

The assessment of the contracting organizational leadership provides an evaluation of the senior contract managers' involvement in clearly communicating the contracting activity's mission and vision statement and adopting consistent guiding principles focused on performance expectations, customer satisfaction, and continuous commitment to learning and improving (Shaver, 2019b). The senior manager's evaluation examines the tools and means utilized to effectively communicate and reinforce the contracting organization's values, mission, policies, procedures, and vision (Shaver, 2019b). The contracting activity leadership plays a critical role in effective command and control over

all contracting functions. They are responsible for providing adequate and necessary tools to achieve the mission.

The contracting organization's strategic planning assessment examines how well the contracting activity strategic vision is aligned with the commander's intent and strategic plan (Shaver, 2019b).

The contracting organization's customer and supplier focus is the evaluation element that examines the methods and processes used by the contracting organization to determine "requirements, expectations, and satisfaction of its customers," to establish interactions "with its contractors," and to conduct "market research and analysis" (Shaver, 2019b, p. 15). The customer and supplier focus evaluation is the capability and ability of the contracting activity to effectively collect information and data about the industries that it conducts business with and to use this information to better satisfy the customer's needs (Shaver, 2019b). First, the review of the customer and supplier survey process is important as it provides an evaluation and examination of the formal and informal processes that the contracting activity uses to conduct a survey for its customers and suppliers and work toward implementing improvement actions plan (Shaver, 2019b). Second, customer knowledge can help the contracting activity identify "its actual and potential customers and" determine "their long-term requirements, expectations, and preferences" (Shaver, 2019b, p. 15). Third, the contracting activity needs to provide "access and information to enable customers to seek assistance, conduct business and voice complaints" (Shaver, 2019b, p. 16). The contracting activity should be assessed on how well it manages complaints and adopts a lessons-learned process in order not to repeat the same discrepancies. Last, the contracting activity is being assessed on how well it is performing market research and analysis to satisfy the customer requirements (Shaver, 2019b).

Another review element when assessing the organization and function is the examination of the contracting human resource management. This examination consists of evaluating how the contracting activity is employing and sustaining appropriate staffing levels per the Acquisition Staffing Analysis and Validation requirements set in SECNAVINST 4200.37A to perform its acquisition contracting mission (SECNAV, 2019). This evaluation also includes

how workforce is recruited, developed, organized, enabled to utilize its full potential, continuously trained, and aligned with the contracting activity's objectives [and] examines the manner in which the contracting activity strives to build and maintain an environment conducive to performance excellence, full participation, and personal and organizational growth. (Shaver, 2019b, p. 16)

The last review element of the assessment of organizational leadership is the examination of the extent to which the contracting activity adheres to the DON Small Business Programs mandate. The PPMAP requires an evaluation of the effectiveness of the program and its impact on small businesses.

b.   Management Controls and Internal Controls

The Management Controls and Internal Controls examine and assess the effectiveness and efficiency of the management of key procurement and contracting processes by the contracting activity. This assessment includes the degree and volume by which the contracting organization introduced and established continuous improvements to these processes to achieve the contracting organization's objectives (Shaver, 2019b). The Management Controls and Internal Controls assessment principal factor contains five review elements: warrant file review, CRB, management of key procurement processes, special interest items (SIIs), and implementation and execution of the PPMAP (Shaver, 2019b).

The warrant file review consists of examining the process utilized by the contracting activity to ensure compliance with the requirement for the annual audit records outlined in SECNAVINST 42000.37A (Shaver, 2019b). The HCA shall "conduct an annual audit of records on warrants issued to ensure all warrant holders and acquisition certified professionals maintain eligibility and meet skills currency requirements" (SECNAV, 2019, p. 6).

The CRB's review element consists of evaluating and assessing the process that the contracting activity utilizes to complete the requirements set forth by the SECNAVINST 4200.37A (SECNAV, 2019). This instruction mandates "a review board that meets on an as-needed basis to review and monitor contract actions to ensure compliance with acquisition policies, procedures and regulations and to ensure that contracting decisions

reflect sound business judgment" (SECNAV, 2019, Enclosure 1). The CRB is one of the internal control mechanisms that can be implemented as needed at the discretion of the HCA.

The management of key procurement processes is another review element that examines and assesses the procurement and acquisition processes utilized by the contracting activity to complete the assigned acquisition and contracting requirements (Shaver, 2019b). The purpose of this examination is to assess the effectiveness and efficiency of the contracting and procurement processes established and managed by the contracting activity, including the scope of continuous improvements and how well it was used to achieve the contracting activity mission and vision (Shaver, 2019b). This assessment "validates the extent the contracting activity uses metrics to determine historical/current trends, goals, or objectives; whether comparative data is obtained from benchmarking performance; and, if customer requirements/feedback and/or employee feedback had an effect on process development, implementation and/or improvement" (Shaver, 2019b, p. 17).

The next review element is the SII. This assessment focuses on evaluating how the contracting activity establishes and implements policies, processes, practices, and other information for procurement and contracting issues or subjects of high interest outlined by regulation or by higher management for review (Shaver, 2019b). The PPMAP assessment assists in verifying and validating compliance throughout the contracting organization. Some examples of SIIs are compliance with the FAR, DFARS, NMCARS; designation/ management of contracting officer's representatives (CORs); the Government-Wide Commercial Purchase Card (GCPC) program; and contractual services oversight and management (Shaver, 2019b).

The last review element under management controls and internal controls is the implementation and execution of the PPMAP. This review element evaluates how fully the contracting activity implemented a PPMAP review process for the entire organization (Shaver, 2019b). This assessment also focuses on examining how well the contracting activity manages, controls, and improves the contracting and procurement processes;

introduces and implements corrective actions; and fosters an environment to share the best practices and lessons learned (Shaver, 2019b).

c. Regulatory Compliance

The last PPMAP principal assessment factor is Regulatory Compliance. This assessment factor examines a sample of the contracting activity contract files under the authority of the HCA (Shaver, 2019b). It assesses the extent of compliance with current laws, regulations, policy, and guidance in the performance and execution of contract actions (Shaver, 2019b). It validates and verifies whether the contract files show good quality and effectively documents business decisions while maintaining integrity and transparency in the contracting and procurement process (Shaver, 2019b).

The next section discusses the PPMAP assessment ratings for the HCA's procurement operations.

3. PPMAP Assessment Ratings

The PPMAP team utilizes a four "adjectival rating" system " of *highly satisfactory*, *satisfactory*, *marginal*, or *unsatisfactory, as applicable, upon conclusion of a PPMAP review of a contracting activity, subordinate contracting organization or field activity with delegated procurement authority"* (Shaver, 2019a, p. 1). The research illustrates that increased or reduced procurement management oversight of a contracting organization depends on whether the PPMAP team assigns the review above or below a *satisfactory* rating. The subsections identified in the following section provide an assessment description for each assessment rating within each of the three PPMAP principal assessment factors, as outlined in the PPMAP rating system (Shaver, 2019a).

a. Highly Satisfactory

Table 1 provides a *highly satisfactory* rating assessment description for each of the three PPMAP principal assessment factors.

Table 1.   Highly Satisfactory Rating Assessment. Adapted from DASN(AP) (2019a, p. 5).

HIGHLY SATISFACTORY	
Principal Assessment Factor	**Assessment Description**
Organizational Leadership	Leadership demonstrates a strong commitment towards responsible and accountable performance that clearly resonates throughout the contracting activity/subordinate contracting organization/field activity, and notably enables the effective and efficient execution of assigned acquisition/ contracting mission and responsibilities. Acquisition staffing and workload analyses, including other management actions, are performed to identify and maintain optimal resource levels necessary for efficient execution of assigned acquisition mission.
Management Controls and Internal Controls	Highly effective management controls and internal controls are in place to enable execution of the acquisition mission. Key acquisition and procurement processes are fully implemented, managed, controlled, and periodically improved. Timely policy dissemination and implementation occurs and enables the workforce to effectively execute the contracting mission. Vulnerabilities to fraud, waste or abuse are essentially non-existent as there are highly effective management/internal control plans in place to mitigate vulnerabilities or to execute corrective actions if any found. No repeat findings remain as corrective actions from earlier PPMAP or internal reviews have been fully implemented. The overall tenets of DON's PPMAP review process have been implemented and are being followed.
Regulatory Compliance	The contracting activity/subordinate contracting organization/field activity clearly demonstrates a systematic approach to adhering to procurement law, regulation and policy. There are no

HIGHLY SATISFACTORY	
Principal Assessment Factor	**Assessment Description**
	significant findings or deficiencies, and any weaknesses identified are quickly correctable by the contracting activity/ subordinate contracting organization/field activity. A demonstrated superior quality of contract files and thoroughly documented business decisions is prevalent throughout the contracting activity/subordinate contracting organization/field activity.
Findings represent negligible risk.	

b.   Satisfactory

Table 2 provides a *satisfactory* rating assessment description for each of the three PPMAP principal assessment factors.

Table 2.   Satisfactory Rating Assessment. Adapted from DASN(AP) (2019a, p. 6).

SATISFACTORY	
Principal Assessment Factor	**Assessment Description**
Organizational Leadership	Leadership demonstrates a commitment to responsible and accountable performance that resonates throughout the contracting activity/ subordinate contracting organization/field activity and enables the effective and efficient execution of assigned acquisition/contracting mission and responsibilities. Acquisition staffing and workload analyses are performed to identify and maintain sufficient resource levels necessary for efficient execution of assigned acquisition mission.
Management Controls and Internal Controls	Effective management controls and internal controls are in place to enable execution of the acquisition mission. Key acquisition and procurement processes are

SATISFACTORY	
Principal Assessment Factor	**Assessment Description**
	implemented, managed, controlled, and improved. Timely policy dissemination occurs to enable effective execution of contracting mission. Vulnerabilities to fraud, waste or abuse are negligible and there is an effective plan in place to mitigate vulnerabilities or to execute corrective actions if any found. Few repeat findings remain as corrective actions from earlier PPMAP or internal reviews have not been fully implemented. The basic tenets of DON's PPMAP review process have been implemented and are being followed.
Regulatory Compliance	The contracting activity/subordinate contracting organization/field activity demonstrates a systematic approach to adhering to procurement law, regulation and policy. Few significant findings and some deficiencies and/or weaknesses are noted that are easily correctable by the activity. A demonstrated good quality of contract files and sufficiently documented business decisions is apparent throughout the contracting activity/subordinate contracting organization/field activity.
Findings represent low risk.	

c.   *Marginal*

Table 3 provides a *marginal* rating assessment description for each of the three PPMAP principal assessment factors.

Table 3.   Marginal Rating Assessment. Adapted from DASN(AP) (2019a, p. 7).

MARGINAL	
Principal Assessment Factor	**Assessment Description**
Organizational Leadership	Leadership demonstrates a limited commitment to responsible and accountable performance within the contracting activity/subordinate contracting organization/field activity which hinders the effective and efficient execution of assigned acquisition/ contracting mission and responsibilities. Acquisition staffing and workload analyses, including other management actions, are not always performed to identify and/or maintain sufficient resource levels for efficient execution of assigned acquisition mission.
Management Controls and Internal Controls	Effective management controls and internal controls are not always maintained to enable execution of the acquisition mission. Key acquisition and procurement processes are not fully implemented, managed, controlled, and improved. Timely policy dissemination does not always occur, negatively impacting effective execution of the contracting mission. Some vulnerability to fraud, waste or abuse exists and requires immediate action. A plan to mitigate vulnerabilities or to execute corrective actions is not in place or if in place is not being followed. Some repeat findings remain as corrective actions from earlier PPMAP or internal reviews have not been fully implemented. The overall tenets of DON's PPMAP review process have not been fully implemented or are not being followed.
Regulatory Compliance	The contracting activity/subordinate contracting organization/field activity does not always employ a systematic approach to adhering to procurement law, regulation and policy. There are some

MARGINAL	
Principal Assessment Factor	**Assessment Description**
	significant findings, deficiencies or weaknesses that are not isolated occurrences and require corrective action by the contracting activity, subordinate contracting organization/field activity with minimal, level-above management oversight. The quality of contract files is substandard and there is a lack of sufficiently documented business decisions.
Findings represent medium risk.	

d.   Unsatisfactory

Table 4 provides an *unsatisfactory* rating assessment description for each of the three PPMAP principal assessment factors.

Table 4.   Unsatisfactory Rating Assessment. Adapted from DASN(AP) (2019a, p. 8).

UNSATISFACTORY	
Principal Assessment Factor	**Assessment Description**
Organizational Leadership	Leadership does not demonstrate any commitment to responsible and accountable performance within the contracting activity/subordinate contracting organization/field activity to ensure effective and efficient execution of assigned acquisition/contracting mission and responsibilities. Acquisition staffing and workload analyses, including other management actions, are not performed to identify and/or maintain sufficient resource levels for efficient execution of assigned acquisition mission.
Management Controls and Internal Controls	Effective management controls and internal controls are not in place to enable execution of the acquisition mission. Key

UNSATISFACTORY	
Principal Assessment Factor	**Assessment Description**
	acquisition and procurement processes have not been implemented and the few that are in place are not managed, controlled, or improved. Policy dissemination or implementation rarely occurs, negatively impacting effective execution of contracting mission. Vulnerabilities to fraud, waste or abuse have been positively identified, and appropriate corrective actions have not been initiated. There is no plan in place to mitigate these vulnerabilities or to execute required corrective actions. Many repeat findings remain as corrective actions from earlier PPMAP or internal reviews have not been implemented. The overall tenets of DON's PPMA preview process have not been implemented or followed.
Regulatory Compliance	There is a demonstrated systemic pattern of not adhering to law, regulation or policy in the execution of assigned acquisition/contracting mission and responsibilities. There are many significant findings and/or deficiencies or weaknesses requiring immediate corrective action by the contracting activity/subordinate contracting organization/field activity with increased management oversight. The quality of contract files is substantially lacking and business decision documents are not sufficiently supported or are consistently missing.
Findings represent high risk.	

When determining the final recommended rating for the contracting organization, the following principles apply:

- An assessment factor that is rated *unsatisfactory* will result in the same final recommended overall rating for the activity.
- An assessment factor that is rated *marginal* may result in the same final recommended overall rating for the activity.
- Two of the three assessment factors must receive a *highly satisfactory* rating for the final overall rating for an activity to be *highly satisfactory*.
- Under no circumstances shall the final overall rating of an activity be above *satisfactory* if a principal assessment factor is rated *marginal*. (Shaver, 2019a, p. 11)

In conclusion, the PPMAP is the

cornerstone of Navy's and Marine Corps' contracting enterprise governance. The need for strong ethical leadership and practical guidance on how to apply contracting principles, supported by a robust training doctrine, is paramount to sustaining the resource base required to provide the requisite acquisition contracting capability necessary to support the Naval Forces mission while minimizing vulnerability to fraud, waste, and abuse. (SECNAV, 2019, p. 1)

As shown in the previous discussion, the CMMM covers the six phases of contract management with sufficient granularity to get into the task activities, whereas the PPMAP is at a higher level without getting into the specific phases of the contracting process.

F. SUMMARY

In this chapter, we reviewed auditability theory because it includes the capable process component, which is the focus of our research. Because we are looking at contract management processes, we discussed the CMS. Also, because we are researching assessing the process capability of an organization's contract management processes, we discussed the CMMM, which is an assessment for contract management process capability. Finally, because we are assessing NAVWAR, we assessed the current assessment tool they use that is more compliance-focused. The next chapter discusses the NAVWAR organization and NAVWAR HQ's contracting branch.

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III. NAVAL INFORMATION WARFARE SYSTEMS COMMAND

A. INTRODUCTION

This chapter provides a breakdown of the NAVWAR organization, NAVWAR HQ's contracting organization, why we chose NAVWAR to study, and the NAVWAR HQ's participants we sampled for the CMMM assessment.

B. NAVAL INFORMATION WARFARE SYSTEMS COMMAND ORGANIZATION

According to its mission statement, "Naval Information Warfare Systems Command's (NAVWAR) identifies, develops, delivers, and sustains information warfighting capabilities, supporting naval, joint, coalition and other national missions" (NAVWAR, n.d.). The following is an overview of the NAVWAR organization.

NAVWAR supports three Navy program executive offices (PEOs): PEO Command, Control, Communications, Computers and Intelligence (PEO C4I); PEO Enterprise Information System (PEO EIS); and PEO Space Systems (NAVWAR, n.d.). "NAVWAR is a large, complex, geographically dispersed organization which provides research and development, systems engineering, testing and evaluation, technical, in-service and support services to the PEOs during all phases of a program's life cycle" (NAVWAR, n.d.). PEOs in the program offices make conservative efforts to "minimize cost while rapidly delivering products to warfighters" (NAVWAR, n.d.).

NAVWAR is one of five major Department of Navy acquisition commands and is in the business of "rapidly deliver[ing] cyber warfighting capability from seabed to space" (NAVWAR, n.d.). With a strength of "10,000 active duty military and civil service professionals" established "around the world and close to the fleet, NAVWAR is at the forefront of … provid[ing] and sustain[ing] informational warfare capabilities to the fleet" (NAVWAR, n.d.). NAVWAR is able to transform naval vessels, aircraft, and ground vehicles into multiplatform operating platforms (NAVWAR, n.d.). This ability allows for effective "information warfare among Navy, Marines, Joint Forces, federal agencies, and international allies" (NAVWAR, n.d.).

With their headquarters located in San Diego, CA, NAVWAR is a Navy Competency-Aligned Organization. "These major competencies are defined as observable, measurable patterns of skills, knowledge, abilities, behaviors, and other characteristics" required for individuals to effectively perform their duties successfully in support of the military workforce (NAVWAR, n.d.). "As a competency-aligned organization, each of NAVWAR's systems centers also align their business portfolios to customer demand" (NAVWAR, n.d.). NAVWAR strives to be a cost-effective provider of rapid cyber warfighting capability from seabed to space (NAVWAR, n.d.). As a Competency-Aligned Organization, NAVWAR has the responsibility to meet commitments, be the technical expert, be a trusted partner, and develop their people and organization (NAVWAR, n.d.).

NAVWAR has the additional obligation of instituting and applying technical authorization in operating "effectively and efficiently in cyberspace" (NAVWAR, n.d.). NAVWAR uses their "technical expertise to ensure systems are engineered effectively with respect to capacity, security, and reliability," while also maintaining affordability and providing "on-schedule delivery to the fleet" (NAVWAR, n.d.).

C. NAVAL INFORMATION WARFARE SYSTEMS COMMAND CONTRACTING 2.0 ORGANIZATION

According to NAVWAR (2020), "the NAVWAR Contracts competency provides dedicated contracting officers and supporting staff to perform contracting functions for PEOs, program offices and project managers across the organization." NAVWAR 2.0 serves as NAVWAR's business center, providing quality customer service by ensuring all contracts receive top notch attention from cradle to grave. NAVWAR 2.0 works directly with the Fleet Readiness Directorate. NAVWAR 2.0 "manages the procurement process by participating in the development of acquisition strategies and plans; defining procurement methods; soliciting, negotiating, and awarding contracts; and administering contract performance—all to meet customer requirements" (NAVWAR, n.d.).

NAVWAR 2.0 is focused on the procurement of services, specifically complex cyber and information warfare–type services. Examples include contracts for tactical

networking and communication; command, control, and battlespace awareness and information operations; and information assurance and cyber security. They also contract for Navy Enterprise Networking Personal Systems and Enterprise Resource Planning (ERP), ground systems, Mobile User Objective System (MUOS) satellites, small and nanosatellite programs, and technical, industrial, and logistical support. Also, NAVWAR contracts for other professional services, such as engineering, finance, and program management (NAVWAR, n.d.). NAVWAR performs these contracting activities within different NAVWAR contracting branches. These areas include Information Warfare Platforms, Communications, Networks, International Programs, Enterprise Information Systems, Fleet Readiness and Space, and Naval Enterprise Networks.

D.   SELECTING NAVAL INFORMATION WARFARE SYSTEMS COMMAND FOR THIS RESEARCH

Because of the complexity and criticality of services that NAVWAR procures, the researchers identified this organization as an excellent opportunity to conduct the contract management process maturity assessment.

Based on our literature review, we found a gap in the assessment of Navy acquisition centers. NAVWAR provides an excellent opportunity to conduct the CMMM assessment, because previous research has been conducted on all other Naval systems commands. Research has been conducted on NAVSEA, NAVAIR, and NAVSUP. The only other remaining acquisition organization in the Navy is NAVWAR. The acquisition of information and complex services is an area that completes the research stream on Navy contract management process capability assessments. The next chapter provides a discussion of the findings of the assessment.

E.   SUMMARY

This chapter discussed the NAVWAR organization and included where NAVWAR fits among the other systems commands. The chapter also discussed NAVWAR's corporate leadership, NAVWAR's support of three Navy PEOs, NAVWAR's Competency-Aligned Organization, NAVWAR 2.0's organization, and NAVWAR's procurement process. Finally, this chapter discussed the reasons why

NAVWAR was selected for this research, and CMMM participant selection. The next chapter discusses the findings, results, and recommendations of this research.

IV.   FINDINGS AND RECOMMENDATIONS

A.   INTRODUCTION

In this chapter, the CMMM assessment findings at NAVWAR HQ are discussed. Maturity levels are assigned for each contract management key process area based on the survey's assessment results. An overall maturity level for NAVWAR HQ's contract management process is also issued. Next, we provide a broad overview of the results of NAVWAR HQ's PPMAP that was conducted between January 29, 2020 and February 14, 2020 (Deputy Assistant Secretary of the Navy for Procurement [DASN(P)], 2020). These results are analyzed and compared with the CMMM assessment results to determine what patterns exist between regulatory compliance and contract management best practices.

B.   SELECTION OF STUDY PARTICIPANTS

For our CMMM assessment, NAVWAR HQ's 1102s and military equivalents who have DAWIA Level II or higher qualifications in contracting were selected. These individuals are directly involved in the contract management key process areas and have the most experience when dealing with the life cycle of a contract. Because of their required training and experience, the DAWIA Level II and above 1102s and military equivalents at NAVWAR HQ are best suited to answer the CMMM survey items. In selecting these study participants, we obtain an accurate depiction of the contract management process maturity levels within each contract management key process area at NAVWAR HQ. Additionally, by providing the survey to all designated DAWIA Level II and above contract managers at NAVWAR HQ, it helped to remove bias in the survey results.

C.   ADMINISTRATION OF CMMM SURVEY

The CMMM assessment was administered to NAVWAR HQ by the deputy director of contracts. The survey was sent to all NAVWAR HQ's DAWIA Level II and III 1102s and military equivalents by way of email. Recipients were asked to voluntarily take the online survey. The survey was open for 21 days and used a 5-point Likert scale to assess the level of agreement on the use of contract management best practices within the organization. After the survey closed, all responses were analyzed to properly assign the maturity levels for each

contract management key process area. For each item answered within each contract management key process area, the average scores were totaled to provide the calculated total for a specific contract management key process area. These contract management key process area totals were then converted to determine the process maturity levels. NAVWAR HQ demographics within the contracting organization are provided in Table 5. There were 91 eligible NAVWAR HQ participants, with only 28 taking the survey. This represents a 30.7% response rate. Twenty-three of the participants were DAWIA Level III certified, with 19 of them being contracting officers. The majority of participants had between 9 and 13 years of experience in contracting, with the majority having only 3 years or less of experience at NAVWAR.

Table 5.   NAVWAR 2.0 CMMM Demographics

Total Qualified	Responses	DAWIA Level II/III	PCO?	Experience (Contracting Years)	Experience (NAVWAR Years)
91	28	II: 5 III: 23	PCO: 19 No: 9	19+ yrs: 6 14-18 yrs: 3 9-13 yrs: 14 4-8 yrs: 2 3 or less: 3	19+ yrs: 2 14-18 yrs: 3 9-13 yrs: 9 4-8 yrs: 4 3 or less: 10

D.   CONTRACT MANAGEMENT KEY PROCESS AREA ANALYSIS

This section discusses the results of the contract management key process areas survey and of the assessment of the organization's process maturity level. The CMMM assessment has specific items that align with a particular process capability enabler. These enablers relate to Process Strength, Process Results, Management Support, Process Integration, and Process Measurement (Rendon, 2015). This section further analyzes and discusses each of the six contract management key process area results identified from the CMMM assessment.

The mean and standard deviation for each survey item within each of the contract management key process areas of the survey are shown in Figure 9. Additionally, Figure 9 provides a total mean for each of the contract management key process areas. This total mean translates to the level of its process maturity, as shown in Figure 10.

Key Process Area/Item	Mean	SD	n
Procurement Planning			
1.1 Process Strength	4.5	0.64	28
1.2 Process Strength	3.9	1.18	28
1.3 Process Strength	3.9	0.93	28
1.4 Process Results	4.1	0.73	27
1.5 Management Support	4.1	1.07	27
1.6 Process Integration	4.0	1.39	26
1.7 Process Integration	4.0	0.87	26
1.8 Process Integration	4.3	0.62	26
1.9 Process Measurement	3.5	1.45	27
1.10 Process Measurement	3.9	1.01	27
Total	40.1		
Solicitation Planning			
2.1 Process Strength	4.5	0.70	27
2.2 Process Strength	4.3	0.79	26
2.3 Process Strength	3.8	0.99	25
2.4 Process Results	4.1	0.60	25
2.5 Management Support	4.3	0.61	25
2.6 Process Integration	3.9	1.09	25
2.7 Process Integration	4.0	0.89	25
2.8 Management Support	3.8	1.07	26
2.9 Process Measurement	3.2	1.68	25
2.10 Process Measurement	3.8	1.30	25
Total	39.7		
Solicitation			
3.1 Process Strength	4.3	0.63	26
3.2 Process Strength	4.1	0.73	25
3.3 Process Strength	3.8	1.32	26
3.4 Process Results	3.8	1.02	26
3.5 Management Support	4.2	1.07	25
3.6 Process Integration	3.8	1.35	26
3.7 Process Integration	4.0	1.17	25
3.8 Process Integration	3.5	1.33	25
3.9 Process Measurement	3.4	1.55	25
3.10 Process Measurement	3.5	1.63	26
Total	38.5		
Source Selection			
4.1 Process Strength	4.2	1.11	25
4.2 Process Strength	3.8	1.38	25
4.3 Process Strength	3.8	1.15	25
4.4 Process Results	4.1	1.05	25
4.5 Management Support	4.0	1.35	25
4.6 Process Results	3.8	1.44	25
4.7 Process Results	4.1	1.10	24
4.8 Process Integration	4.0	1.24	23
4.9 Process Integration	4.1	1.23	22
4.10 Process Measurement	3.4	1.53	24
4.11 Process Measurement	3.8	1.28	24
Total	43.0		
Contract Administration			
5.1 Process Strength	3.7	1.37	24
5.2 Process Strength	3.4	1.64	24
5.3 Process Strength	3.6	1.38	24
5.4 Process Results	3.3	1.66	24
5.5 Management Support	3.5	1.64	24
5.6 Process Integration	3.7	1.30	24
5.7 Process Integration	3.6	1.64	24
5.8 Process Integration	3.7	1.43	23
5.9 Process Integration	3.6	1.88	21
5.10 Process Measurement	3.1	1.91	23
5.11 Process Measurement	3.5	1.72	24
Total	38.7		
Contract Closeout			
6.1 Process Strength	2.0	2.08	22
6.2 Process Strength	2.0	2.03	22
6.3 Process Strength	2.0	2.03	22
6.4 Process Results	2.0	2.06	22
6.5 Management Support	1.5	1.95	22
6.6 Process Integration	2.0	1.90	22
6.7 Process Integration	2.0	2.08	22
6.8 Process Measurement	1.6	1.99	21
6.9 Process Measurement	1.7	2.03	22
6.10 Process Measurement	1.7	2.10	21
Total	18.42		

Figure 9.   NAVWAR Survey Results

Figure 10 shows the process maturity levels for each of the six contract management key process areas in the CMMM.

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					★	
1 AD HOC						★

Figure 10.   NAVWAR CMMM Summary

Figure 11 depicts the summary ratings of the means that originated from the submitted survey responses for each item on the CMMM assessment.

Summary Ratings

	1	2	3	4	5	6	7	8	9	10	11
Procurement Planning	4.5	3.9	3.9	4.1	4.1	4.0	4.0	4.3	3.5	3.9	
Solicitation Planning	4.5	4.3	3.8	4.1	4.3	3.9	4.0	3.8	3.2	3.8	
Solicitation	4.3	4.1	3.8	3.8	4.2	3.8	4.0	3.5	3.4	3.5	
Source Selection	4.2	3.8	3.8	4.1	4.0	3.8	4.1	4.0	4.1	3.4	3.8
Contract Administration	3.7	3.4	3.6	3.3	3.5	3.7	3.6	3.7	3.6	3.1	3.5
Contract Closeout	2.0	2.0	2.0	2.0	1.5	2.0	2.0	1.6	1.7	1.7	

Item
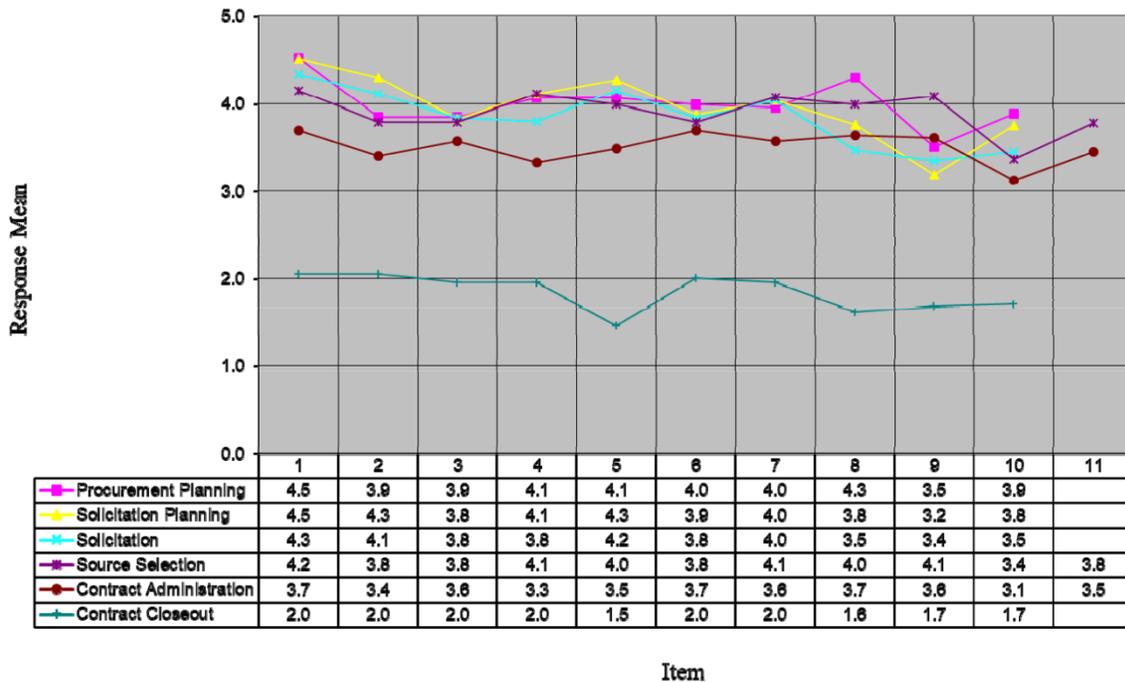
Figure 11.   NAVWAR CMMM Summary Ratings

According to the CMMM assessment, Procurement Planning, Solicitation Planning, Solicitation, and Source Selection were rated at Level 3 *structured* maturity level for NAVWAR. A structured maturity level suggests NAVWAR has "contract management processes and standards" for all contract management key process areas and that they "are fully established, institutionalized, and mandated throughout the entire organization" (Rendon, 2016b, p. 372). For NAVWAR's processes, "formal documentation has been developed ... and some processes may even be automated" (Rendon, 2016, p. 372). Additionally, "since these contract management processes are mandated," NAVWAR "allows the tailoring of processes and documents in consideration for the unique aspects of each contract" (Rendon, 2016, p. 373). NAVWAR's organizational leadership and management "is involved in providing guidance, direction, and even approval of key contracting strategies, decisions, related contract terms and conditions, and contract management documents" (Rendon, 2016, p. 273).

According to the CMMM assessment, Contract Administration was rated at Level 2 *basic* maturity level for NAVWAR. The findings based on the CMMM assessment

support the observations of Rendon (2016b). More specifically, a basic maturity level suggests NAVWAR's contract administration key process area has "established some basic contract management processes and standards within the organization, but these processes 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" (Rendon, 2016b, p. 372). Additionally, the results indicate that NAVWAR "does not consider contract management processes or standards established or institutionalized throughout the entire organization" when administering contracts (Rendon, 2016b, p. 372). Finally, the CMMM assessment suggests that NAVWAR's Contract Administration area has "no organizational policy requiring the consistent use of contract management processes and standards on contracts other than the required contracts" (Rendon, 2016b, p. 372).

According to the CMMM assessment, Contract Closeout was rated at the Level 1 *"ad hoc"* maturity level for NAVWAR. The findings based on the CMMM assessment support the observations of Rendon (2016b). More specifically, an "ad hoc" maturity level suggests NAVWAR doesn't "have established organization-wide contract management processes" for Contract Closeout (Rendon, 2016b, p. 372). The Contract Closeout key process area results suggest that "some established contract management processes do exist and are used within the organization, but these processes are applied only on an Ad Hoc and sporadic basis to various contracts. There is no rhyme or reason as to which contracts these processes are applied" (Rendon, 2016b, p. 372). Additionally, for the Contract Closeout processes, "there is informal documentation of contract management processes existing within the organization, but this documentation is used only on an Ad Hoc and sporadic basis on various contracts" (Rendon, 2016b, p. 372). When closing out contracts, the CMMM assessment suggests that "organizational managers and contract management personnel are not held accountable for adhering to or complying with, any basic contract management processes or standards" (Rendon, 2016b, p. 372).

1. Procurement Planning

Figure 12 shows the mean response rating for the ten Procurement Planning key process area items. The results show evidence of a "structured" maturity level, maturing

into the next higher level. Items nine and ten bring the mean into the "structured" level, as they are the two lowest average response ratings inside of this contract management key process area. These two items associate the organization with utilizing efficiency and effectiveness metrics when evaluating their Procurement Planning processes, as well as adopting lessons learned for continuous process improvements. The averages of these two items indicate that these process measurements discussed happen sometimes but are not consistently utilized.
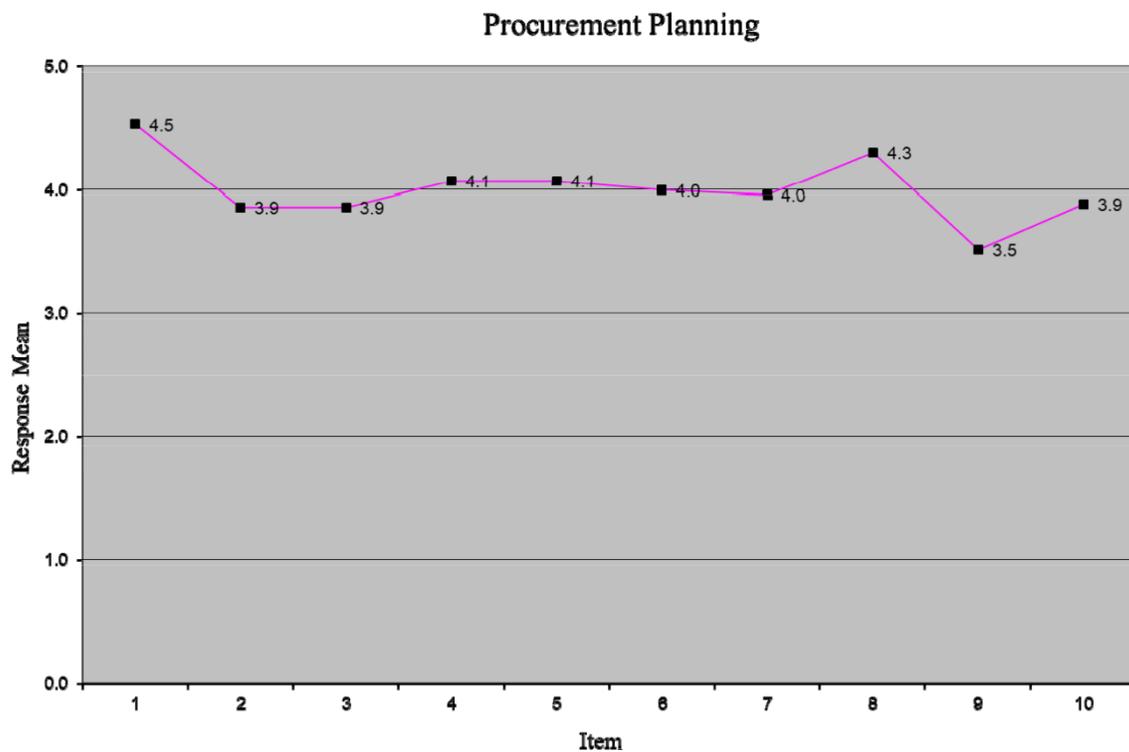
Figure 12.   CMMM Procurement Planning Summary

2.   Solicitation Planning

Figure 13 shows the mean response rating for the ten Solicitation Planning key process area items. The results show evidence of a "structured" maturity level, and similar to the Procurement Planning maturity level identified in Figure 12, the Solicitation Planning maturity level is maturing into the next higher level. Item nine brings the mean into the "structured" level, as it has the lowest average response rating inside of this

contract management key process area at 3.2. This item associates the organization with utilizing efficiency and effectiveness metrics when evaluating their Solicitation Planning processes. The average in the survey responses to this item indicates that the process measurement occurs sometimes but is not consistently utilized.
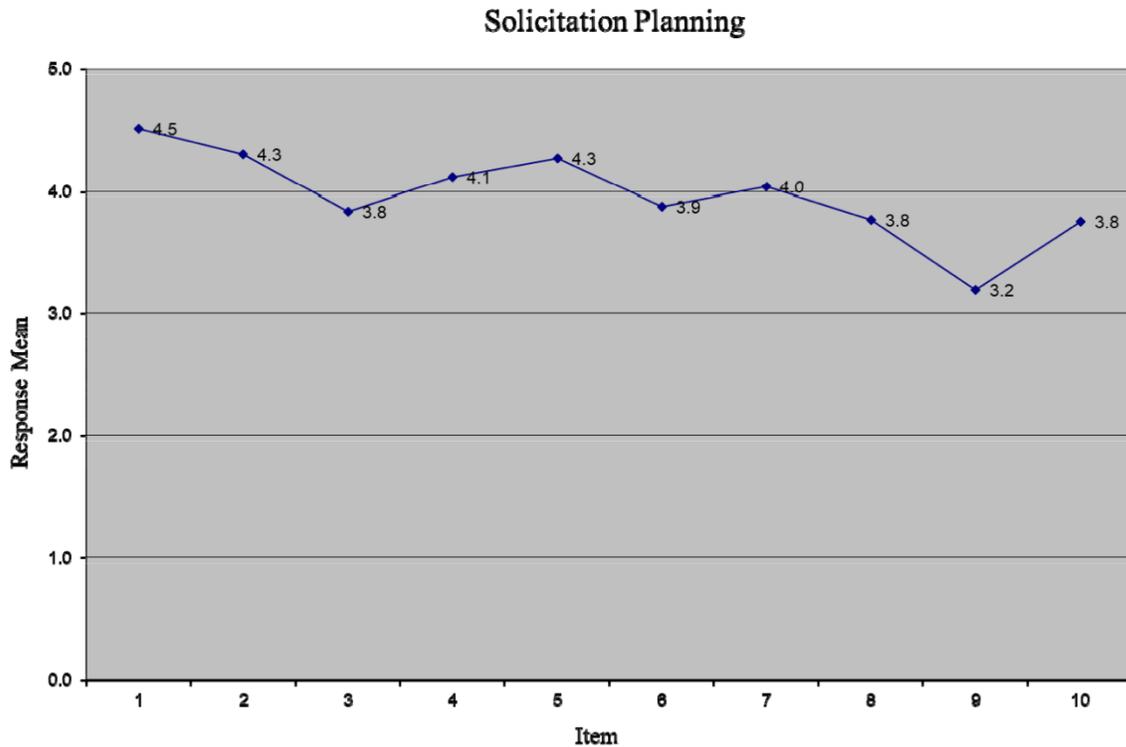
Figure 13.   CMMM Solicitation Planning Summary

3.   Solicitation

Figure 14 shows the mean response rating for the ten Solicitation key process area items. The results show evidence of a "structured" maturity level, with items eight through ten having a significantly lower mean than the other items in this contract management key process area. Item eight involves the Solicitation process, including integrating inputs and recommendations from industry when developing solicitation documents. The 3.5 mean for item eight suggests this sometimes occurs but is not consistently utilized. Items nine and ten associate the organization with utilizing efficiency and effectiveness metrics when evaluating their solicitation processes, as well as adopting lessons learned for continuous

process improvements. The averages of these two items indicate that these process measurements discussed happen sometimes but are not consistently utilized.
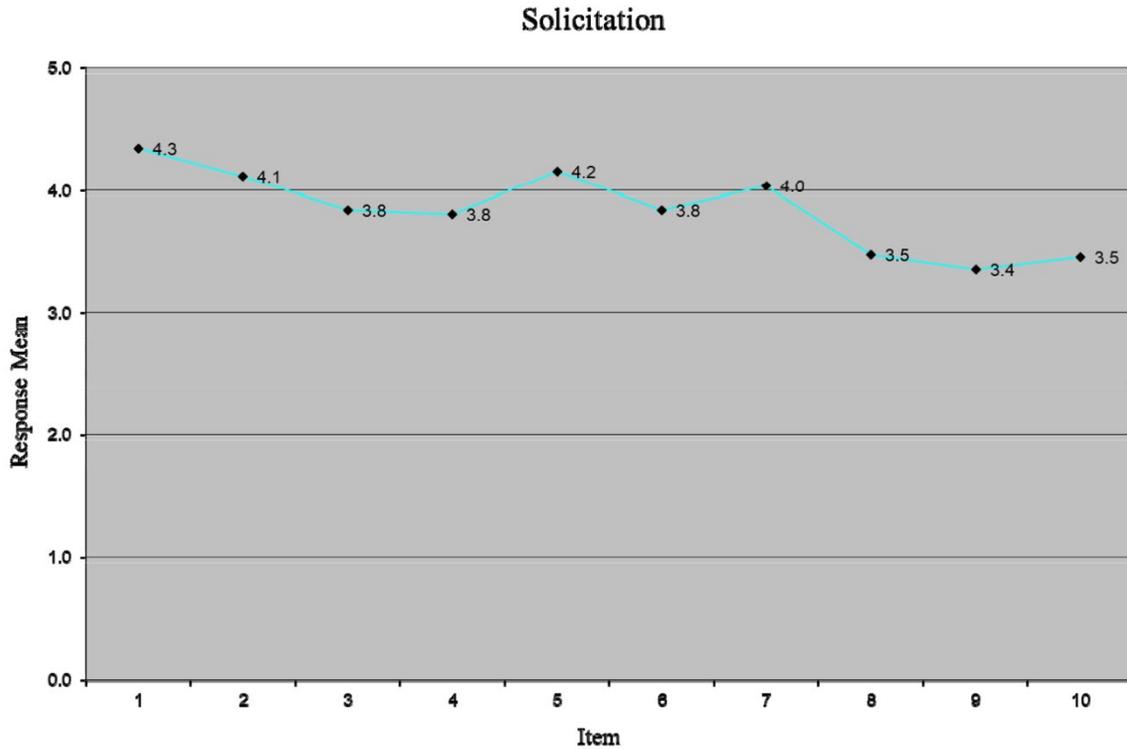
Figure 14.   CMMM Solicitation Summary

4.   Source Selection

Figure 15 shows the mean response rating for the eleven Source Selection key process area items. The results show evidence of a "structured" maturity level. Item ten is the lowest rated item from the survey responses, at a 3.4 mean. This item associates the organization with utilizing efficiency and effectiveness metrics when evaluating their Source Selection processes. The average in the survey responses to this item indicates the process measurement occurs sometimes but is not consistently utilized.
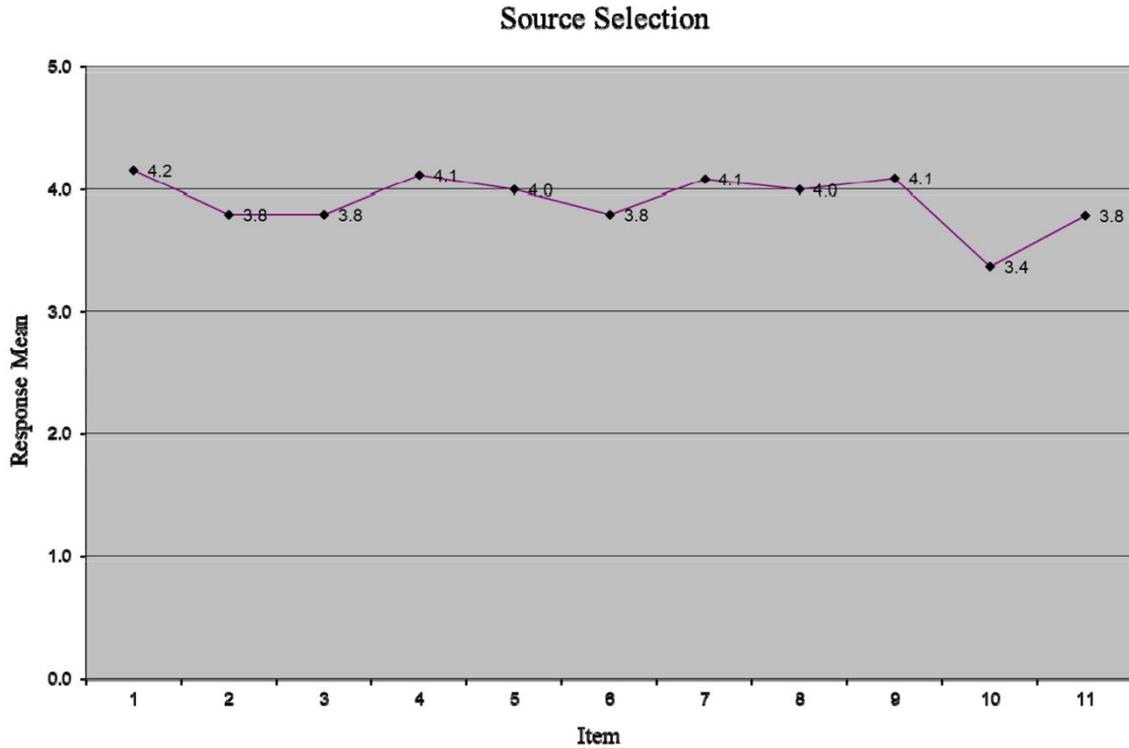
Figure 15.   CMMM Source Selection Summary

5. Contract Administration

Figure 16 shows the mean response rating for the eleven Contract Administration key process area items. The results show evidence of a "basic" maturity level, with all the items' averages measuring very close to each other. The consistent pattern being identified throughout all the Contract management key process areas is the lowest rated item answered for each key process area involves the lack of an organization consistently utilizing the efficiency and effectiveness metrics in systematic evaluations of the contract management key process area. A 3.1 average for item ten indicates that this process measurement occurs sometimes but is not consistently utilized.
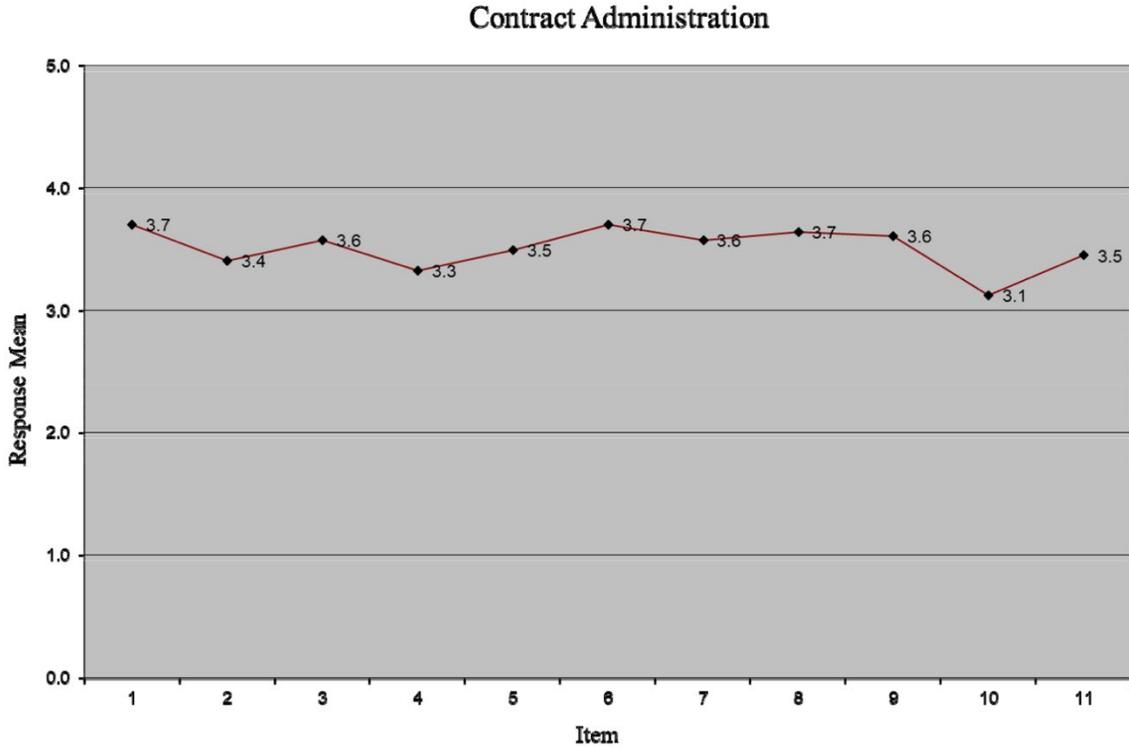
Figure 16.   CMMM Contract Administration Summary

6.   Contract Closeout

Figure 17 shows the mean response rating for the ten Contract Closeout key process area items. The results show evidence of an "ad hoc" maturity level, with the average of each item scoring significantly lower than the average of each item in the previously discussed contract management key process areas. With not one item being above 2.0, the Contract Closeout processes are seldom utilized, if at all, within the organization.
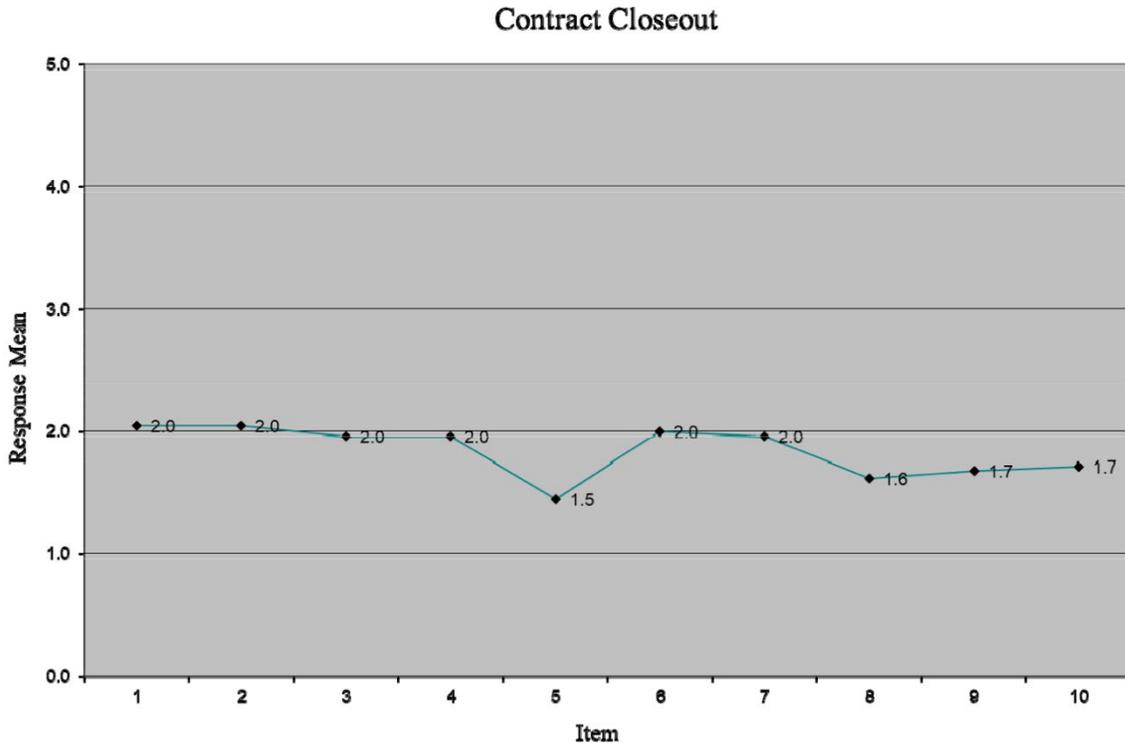
Figure 17.   CMMM Contract Closeout Summary

E.   PROCESS CAPABILITY ENABLER ANALYSIS

There are process capability enablers within each contract management key process area. Rendon (2015) states that "these maturity assessment results can be analyzed from the perspective of contract management process capability enablers" (p. 1493). These process capability enablers are incorporated into contract management processes, and if the enablers are emphasized within the organization regularly, best practices can be developed throughout NAVWAR's contract management team. This section analyzes the five process capability enablers within each of the contract management key process areas identified, which are noted in the CMMM assessment: Process Strength, Process Results, Management Support, Process Integration, and Process Measurement.

1.   Process Strength

Each contract management key process area's first three items center around the Process Strength capability enabler. The NAVWAR HQ CMMM assessment logged this enabler as the highest-scoring survey response mean for each of the contract management

key process areas. Procurement Planning, Solicitation Planning, Solicitation, and Source Selection all had means above 4.2, which would indicate "a stronger use of Process Strength best practices such as ensuring standardized, mandatory, and documented processes" (Rendon, 2015, p. 1493). Likewise, NAVWAR HQ's process areas with the lowest average for Process Strength were Contract Administration and Contract Closeout. With mean scores of 3.7 for Contract Administration and 2.0 for Contract Closeout, there is an indication that NAVWAR HQ has a weaker use of process strength in those areas.

2. Process Results

The fourth item in the CMMM assessment for each of the contract management key process areas pertained to the Process Results capability enabler. Stronger use of Process Results best practices, such as "ensuring appropriate evaluation standards and criteria and in maintaining integrity in the proposal evaluation process," were identified in Procurement Planning, Solicitation Planning, Solicitation, and Source Selection (Rendon, 2015, p. 1493). The two contract management key process areas that showed a weaker mean in Process Results were Contract Administration and Contract Closeout. These weaker results indicate "a weaker use of Process Results best practices in conducting surveillance of contractor performance, processing accurate and timely contractor payments, controlling contract changes, verifying final delivery, and obtaining seller's release of claims" (Rendon, 2015, p. 1495).

3. Management Support

Indications from the survey results show there to be strong management support during Procurement Planning, Solicitation Planning, Solicitation, and Source Selection processes. These findings "indicate a stronger use of Management Support best practices in ensuring senior organizational management are involved in providing input and, if required, approval of" Procurement Planning, Solicitation Planning, Solicitation, and Source Selection "decisions and documents" (Rendon, 2015, p. 1496). Survey results suggest there to be average usage of Management Support best practices when administering contracts, with a 3.5 mean. However, for Contract Closeout processes, a mean of 1.5 indicates there is minimal to no management support best practices during this contract management key process area.

4. Process Integration

Indications from the survey results suggest a strong utilization of process integration during Procurement Planning, Solicitation Planning, and Source Selection. The findings based on the CMMM assessment support the observations of Rendon (2015). More specifically, this would indicate "a stronger use of Process Integration best practices such as using integrated project teams and conducting an integrated assessment of contract type, risk management, and terms and conditions during Procurement Planning, and using integrated project teams in the evaluation of proposals during Source Selection" (Rendon, 2015, p. 1496). Average survey results were present in the Solicitation and Contract Administration process areas. Contract Closeout has a relatively low set of means for Process Integration, with 2.0, 2.0, and 1.6 for the Process Integration items. These findings show "a weaker use of Process Integration best practices such as integrating Contract Administration processes with other functional processes and using an integrated project team approach for monitoring and evaluating the contractor's performance and making related award fee and incentive fee determinations" (Rendon, 2015, p. 1496).

5. Process Measurement

The last two to three items of each contract management key process area address the Process Measurement capability enabler. The findings based on the CMMM assessment support the observations of Rendon (2015). More specifically, for the contract management key process areas, this enabler showed a pattern of having the lowest mean of all the enablers. These low means show "a weaker use of Process Measurement best practices such as using efficiency and effectiveness metrics in administering the contract and closing out the contract ... and a weaker use of practices such as adopting lessons learned and best practices for continuously improving the closing out of contracts and maintaining a lessons learned and best practices database for use in planning future procurements" (Rendon, 2015, p. 1496).

Of note, NAVWAR's use of contract management best practices are highest in Procurement Planning and Source Selection, with both having a total score above 40.0. Contract Administration's total score was 18.42, indicating an average of each process capability enabler being below 2.0.

In this section, we analyzed NAVWAR HQ's CMMM assessment, provided a maturity level rating to the six-contract management key process areas, and analyzed the five process capability enablers within each of the contract management key process areas. In the next section, we briefly discuss NAVWAR HQ's 2020 PPMAP results, followed by an analysis that compares the PPMAP results to the CMMM assessment results.

F.   NAVWAR HQ 2020 PPMAP RESULTS

This section addresses the NAVWAR HQ 2020 PPMAP results. Per the PPMAP, the HCA is required to "to perform periodic self-assessments of procurement processes, performance-based metrics, and the results of employee and customer surveys to continually manage, control, and improve acquisition processes, and management systems used to perform all procurement/contracting operations" (DASN[P], 2020, p. 3). During the PPMAP, the self-assessments results are validated and verified, and another independent assessment is completed according to the PPMAP assessment criteria.

The PPMAP inspectors completed the NAVWAR contracting activity PPMAP assessment on February 14, 2020. The assessment consisted of reviewing three principal assessment factors: Organizational Leadership, Management Controls and Internal Controls, and Regulatory Compliance. Each assessment factor included review elements that are evaluated according to the DASN(AP) instructions.

1.   Review Methodology

The PPMAP assessors consisted of various acquisition and procurement professionals, subject-matter experts, and representatives of the DON Office of Small Business Programs (OSBP) and other entities within the DON organization.

To review the regulatory compliance principal assessment factor, the inspectors retrieved 240 NAVWAR HQ contract actions completed between Fiscal Year 2017 and Fiscal Year 2019. The data was extracted from the Federal Procurement Data System–Next Generation (FFDS–NG) contract reporting system. The assessors selected 79 of 240 retrieved contact actions and conducted an in-depth review of 40 of them.

The PPMAP assessors conducted a series of interviews and discussions with the HCA, the executive director, and different individuals and groups within the NAVWAR

procurement division and other departments within the command, such as program management offices, legal offices, and small business offices. The PPMAP team utilized the guidance of the DON PPMAP Adjectival Rating System Process for rating purposes.

2. Organizational Leadership

The PPMAP team assessed the organizational leadership with a *highly satisfactory* rating with low risk. The assessment evaluates the effectiveness and efficiency of the execution and completion of contracting actions and responsibilities assigned via the command leadership and the procurement leadership. The three review elements assessed under this principal assessment factor are tone from the top, organization and function, and implementation of DON Small Business Programs.

The PPMAP results for this assessment factor indicate a strong leadership presence at NAVWAR HQ that fosters and promotes an environment of innovation and continuous process improvements in procurement and contracting performance while ensuring adherence to contracting practices.

In terms of organization and function, the PPMAP team concluded that NAVWAR HQ's contracting organization is well aligned with the PEOs, which facilitate and increase smooth and effective lines of communication on procurement and acquisition matters between all parties involved. The PPMAP results suggest that NAVWAR HQ is adopting and implementing a process that assists the command plan and tracks the requirements from the beginning of the acquisition process to award. The advance planning conference and acquisition milestone tracker are examples of this effective process.

For the contracting organization's strategic planning, PPMAP assessment found that the strategic vision and objectives of NAVWAR HQ's contracting organization are aligned with their commander's intent. The NAVWAR HQ's contracting team works collectively with the command leadership, stakeholders, and industry in all areas of the procurement process. The contracts team has access to all required tools to complete their contracting tasks. In addition, the PPMAP team found that NAVWAR HQ has effective command and control over contracting functions.

NAVWAR HQ utilizes pilot programs to assist in increasing effectiveness and efficiencies in the procurement process and streamlining contracting practices. This

approach helps NAVWAR HQ to emphasize the importance of their relationship with customers and suppliers. The PPMAP team found that NAVWAR is utilizing methods that allow for proper contracting human resources management. Flexible work schedule arrangements are available, and there is a use of limited contracting authority for developing personnel and succession planning.

Assessing the implementation of DON Small Business Programs indicates that NAVWAR HQ is adopting some promising small business practices that will help to achieve this goal. For each program manager warfare (PMW), an OSBP representative is assigned to ensure that the small business requirements are met when applicable and required. NAVWAR HQ is adopting a standardization of request for information (RFI) processes. The command is integrating small business strategies with long-range acquisition forecasts while hosting small business roundtables.

3. Management Controls and Internal Controls

The assessment of this principal assessment factor focuses on reviewing the effectiveness and efficiency NAVWAR HQ has developed and managed within their key procurement and contracting processes. The assessment includes the extent to which NAVWAR HQ established and implemented continuous process improvements to complete the contracting actions assigned. Various review elements are evaluated during this assessment: Warrant File Review, CRB, Management of Key Procurement Processes, Special Interest Items (SII), and Implementation and Execution of the PPMAP. The PPMAP team assessed the management controls and internal controls as *satisfactory* with low risk.

The assessment of Warrant File Review and the CRB shows that NAVWAR HQ complies with the requirements specified in the SECNAVINST 4200.37A (SECNAV, 2019). When examining the in-house training program, PPMAP results indicate that the NAVWAR HQ training program continues to provide an effective learning tool that provides the workforce with training opportunities.

NAVWAR HQ uses the contract advance planning conference as an effective platform to develop and establish the milestones timeline leading to the contract award. Another management key process area is NAVWAR HQ's *Acquisition Policy and*

Procedures Manual (*NAPPM*) working group sessions, which are utilized to update and revise the *NAPPM* and the transition policy/procedures. The contract file checklist and filing system, however, lacked a standardization in how and where compliance checks are documented.

The review element of SIIs focuses on evaluating how the contracting activity establishes policies, processes, and practices for procurement and contracting problems of high interest outlined by regulations and noted by senior management for review. The NAVWAR HQ contracting workforce is utilizing and complying with the FAR, DFARS, and NMCARS.

When assessing the designation and management of CORs and COR oversight, the inspection team concluded the command has a dedicated COR manager and is utilizing a monthly status report provided to NAVWAR 2.0 leadership detailing the overall status of the COR program. Another review element that was assessed during the PPMAP was contractual services oversight and management (Services Requirements Review Board [SRRB]). The PPMAP team found that NAVWAR HQ is adopting best practices by establishing an internal contractual service working group. This discussion platform is used to demonstrate the best practices and talk about items of interest that affect services acquisition and procurement. NAVWAR HQ personnel involved with this working group are invested in making improvements in the SRRB processes. The deficiency that was noted during the PPMAP regarding the SRRB is the limited SRRB documentation. The NAVWAR HQ's contractual services requirements are not viewed comprehensively. Thus, NAVWAR HQ is unable to synchronize and prioritize its services requirements across the organization.

The PPMAP team found that NAVWAR HQ's implementation of category management can be utilized as great examples for the rest of the DON. NAVWAR HQ also has a contracts requirement coordination board that convenes virtually on a situational basis.

One SII the PPMAP report addressed frequently is labor law. The PPMAP assessment identified a deficiency failure in incorporating the Service Contract Labor Standards clauses in contracts and orders. The PPMAP results also indicate a good

relationship between the contracting and program management personnel and highlight the excellent practice of co-locating legal and contracting in adjacent spaces. This layout allows for a convenient face-to-face contact. The PPMAP results also concluded that NAVWAR HQ has fully implemented the PPMAP at the field activity level and is performing per the requirements of DON PPMAP.

4. Regulatory Compliance

The last assessment principal factor of the PPMAP is regulatory compliance. The main goal of this assessment is to review the extent that NAVWAR HQ displays good quality contracting files that contain adequately documented business decisions. The PPMAP examines to which degree the contracting activity exhibits a systemic approach to complying with acquisition law, regulation, and policy. The PPMAP assessed this principal assessment factor as *satisfactory* with trending toward medium risk.

The PPMAP team selected 79 contract actions, which included large and small businesses, products, and services contracts in different phases of the contract life cycle and fixed-price and cost-type contracts. The PPMAP team reviewed in detail 40 contract actions.

Some of the pre-award phase deficiencies noted during this inspection were selecting the incorrect type of service contract, improperly documenting the rationale behind the use of cost-plus-fixed-fee contracts, not addressing the acquisition planning document and contract file, and having no evidence of System for Award Management verification. Some of the award phase deficiencies were an indefinite delivery, indefinite quantity contract not having the first delivery order being issued until several weeks after award and a contract incorrectly funded at the time of the award. A deficiency identified during the post-award phase was contracting officers not monitoring the prime contractor's compliance with its subcontracting plan (DASN[P], 2020).

In this section, we addressed the PPMAP results for NAVWAR HQ. The results provided an insight into how NAVWAR is establishing and managing the procurement and contracting processes. In the next section, we analyze and compare the PPMAP results to the CMMM assessment results.

G. ANALYSIS OF 2020 PPMAP RESULTS COMPARED WITH CMMM ASSESSMENT RESULTS

For the contracting organization's strategic planning, the PPMAP assessment found that the strategic vision and objectives of the command are aligned with the commander's intent (DASN[P], 2020). With various SMEs in the fields of acquisition and procurement, the PPMAP team used three principal assessment factors—Organizational Leadership, Management Controls and Internal Controls, and Regulatory Compliance—to assess the effectiveness of an organization's procurement management process (DASN[P], 2020). In comparison, our NAVWAR HQ CMMM assessment used SMEs that were certified DAWIA Level II or higher in contracting. The objective of the NAVWAR HQ CMMM assessment was to determine to what extent NAVWAR is incorporating contract management best practices within each contract management key process area. The extent of those best practices determines the process maturity level for the organization. The individuals identified in both the PPMAP inspection and CMMM assessment are engaged daily in the contract management key process areas and are the contracting experts throughout the life cycle of contracts.

The CMMM assessment shows there to be robust management support during Procurement Planning, Solicitation Planning, Solicitation, and Source Selection processes with indications of "a stronger use of Management Support best practices in ensuring senior organizational management are involved" (Rendon, 2015, p. 1496). The PPMAP assessed the organizational leadership factor as *highly satisfactory* with a low-risk level rating (DASN[P], 2020). The CMMM and PPMAP results provide a pattern that identifies strong leadership in contract management at NAVWAR HQ, at least through the contract management key process areas of Procurement Planning and Solicitation. However, for Contract Administration and Contract Closeout, as reflected in the CMMM assessment, the ratings for management support were not very high.

Management Controls and Internal Controls assess how the contracting organization establishes and executes identified key procurement processes (DASN[P], 2020). NAVWAR HQ is operating under the established requirements and standards. The PPMAP evaluated the Management Controls and Internal Controls factor to be *satisfactory* at a low-risk level rating (DASN[P], 2020). The average mean of the Process Strength and

Process Results key enablers identified at least through the contract management key process areas of Procurement Planning and Source Selection of the CMMM placed NAVWAR HQ at a Level 3 "structured" maturity level overall. The CMMM and PPMAP results provide a pattern that identifies the execution of contract actions to be effective at a *satisfactory* level. However, for Contract Administration and Contract Closeout, as reflected in the CMMM assessment, management controls and internal controls may be considered *unsatisfactory* due to the Contract Administration rating of "basic" and Contract Closeout rating of "ad hoc" process maturity levels.

Regulatory Compliance assesses the degree to which the contracting organization can exhibit quality, satisfactorily documented decisions, and a systemic approach to adhering to regulation and policy (DASN[P], 2020). The PPMAP examines the degree to which the contracting activity exhibits a systemic approach to complying with acquisition law, regulation, and policy. The PPMAP assessed Regulatory Compliance as *satisfactory* with a low-risk trending to medium-risk rating. In comparison, the CMMM average mean of the Process Strength and Process Results key enablers identified at least through the contract management key process areas of Procurement Planning and Source Selection of the CMMM placed NAVWAR HQ at a Level 3 "structured" maturity level overall. However, not only does the PPMAP show NAVWAR as *satisfactory* with a low risk trending towards medium risk in terms of regulatory compliance, in terms of contract management best practices for Contract Administration and Contract Closeout, those processes have a lower level of maturity.

By identifying strengths and weaknesses at NAVWAR HQ through the review of PPMAP and CMMM results, this research highlights where NAVWAR can recognize and focus their attention in areas that have weaker maturity levels and incorporate best practices to improve the entire organization based on lessons learned. Based on the CMMM assessment and PPMAP assessment results, our research identified recommendations for contract management process improvement, which are discussed in the next section.

H. CONTRACT MANAGEMENT PROCESS IMPROVEMENT RECOMMENDATIONS

With PPMAP improvement recommendations already provided to NAVWAR within their PPMAP inspection report, this section discusses contract management process improvement recommendations for each of the contract management key process areas within the Pre-Award, Award, and Post-Award phases (DASN[P], 2020). The main purpose of the CMMM assessment is to identify the maturity levels of each contract management key process area and implement continuous improvement best practice efforts for NAVWAR HQ. Based on NAVWAR HQ's CMMM assessment analysis, a road map can be developed to implement improvements to the contract management process (Garrett & Rendon, 2005).

1. Procurement Planning

According to Rendon and Rendon (2015), Procurement Planning "is the process of identifying which organizational needs can best be met by procuring products or services outside the organization" and "determining whether to procure, how to procure, what to procure, how much to procure and when to procure" (p.756). To raise Procurement Planning's maturity level to the next level, "integrated," the organization "should ensure that the process activities"-such as researching the market and acquisition planning-"are integrated with other organizational core processes, such as requirements management, financial management, and risk management" (Rendon, 2015, p. 1498). Additionally, the procurement team should allow the contract's end user to participate and also implement metrics to measure the Procurement Planning process activities.

2. Solicitation Planning

Solicitation Planning is the process of "documenting program requirements" and detecting prospective resources (Rendon, 2008, p. 208). To raise Solicitation Planning's maturity level to the next level, , "integrated,," the organization "should ensure that the process activities"—such as determining document procurement method, and developing evaluation strategy—"are fully integrated with other organizational core processes, such as financial management, performance management, and systems engineering" (Rendon, 2008, p. 206). Additionally, the procurement team should allow the contract's end user to

participate and also implement metrics to measure the Solicitation Planning process activities.

3. Solicitation

Solicitation is the art of getting "quotations, bids, offers, or proposals" (Garrett & Rendon, 2006, p. 304). To raise Solicitation's maturity level to the next level, "integrated," the organization "should ensure that the process activities"—such as opportunities to advertise for procurement and solicitation execution—"are fully integrated with other organizational core processes, such as financial management, performance management, and systems engineering" (Rendon, 2008, p. 206) Additionally, the procurement team should allow the contract's end user to participate and also implement metrics to measure the Solicitation process activities.

4. Source Selection

Source Selection is the process of potential offerors being selected (Rendon, 2008). To raise Source Selection's maturity level to the next level, "integrated," the organization "should ensure that the process activities"—such as proposal evaluation and contract negotiation—"are fully integrated with other organizational core processes, such as financial management, performance management, and systems engineering" (Rendon, 2008, p. 206) Additionally, the procurement team should allow the contract's end user to participate and also implement metrics to measure the Source Selection process activities.

5. Contract Administration

Contract Administration includes executing the legal contract to ensure "each party's performance meets contractual requirements" (Rendon, 2008, p. 208). To raise Contract Administration's maturity level to the next level, "structured," the organization should ensure that the process activities—such as contract performance measurement and monitoring the performance of the contractor—are fully established and institutionalized (Rendon, 2008). Also, these processes should be mandated "throughout the entire organization," as well as involving "senior organizational management ... in providing guidance, direction, and even approval of key contracting strategy, decisions, related contract terms and conditions, and contract management documents" (Garrett & Rendon, 2015, p. 83).

6.   Contract Closeout

Contract Closeout is the final phase of the contract management process. Contract Closeout includes finalizing, resolving, and maintaining the final phase of the contract, including the proper closeout of all remaining outstanding actions documented on the contract (Rendon, 2008). To raise Contract Closeout's maturity level to the next level, "basic," the organization should ensure that the process activities—such as contract compliance verification and verifying final payments are made—"have basic contract management processes and standards established" with "some formal documentation developed" (Rendon, 2008, p. 206).

Last, the importance of conducting the CMMM assessment at NAVWAR HQ is recognized when the outcomes are established into a road map for applying contract management process improvement opportunities, workforce training, and knowledge-sharing initiatives. According to Rendon (2016b),

> The organization can use the process maturity assessment results to identify opportunities for process improvement by incorporating contract management best practices that are associated with higher levels of process maturity. The organization can use the assessment results to identify training areas for its contract management workforce. The organization can use the process assessment results to identify departments that were assessed at higher process maturity levels and have those departments share their knowledge and best practices with the departments that were assessed at lower maturity levels. (pp. 11–12)

I.   SUMMARY

This chapter discussed the results of the CMMM assessment that was administered at NAVWAR HQ, assigned maturity levels for each contract management key process area based on the survey's assessment results, and provided an overall maturity level for NAVWAR HQ's contract management process. Afterward, the chapter discussed the results of NAVWAR HQ's PPMAP. These results were then analyzed and compared with the CMMM assessment to determine what patterns exist between regulatory compliance and contract management best practices within capable contract management processes. The upcoming chapter concludes our research by providing a closing summary while also offering areas of further research.

V. SUMMARY, CONCLUSIONS AND AREAS FOR FURTHER RESEARCH

A. INTRODUCTION

This chapter summarizes the setting and purpose of our research. The chapter then summarizes our assessment of the contract management process maturity of NAVWAR HQ by answering our research questions. The chapter concludes with areas for future research.

B. SUMMARY

In 2018, the DOD awarded over $350 billion in contracts, totaling 570,000 new contracts for critical and noncritical supplies and services to 38,000 contractors (GAO, 2020). In 2019, the DOD allocated more than $389 billion to supplies and services (USAspending, 2019). This pattern of the continuous increase in DOD budget spending was identified in the GAO high-risk report, where it identified DOD contract management as a high-risk area (GAO, 2019). In addition, DOD IG included contract management as a top management challenge (DOD IG, 2019). The DOD response to GAO's and DOD IG's contract management deficiencies reports have always focused on training, with no response related to process capability or improving processes. The importance of capable contract management processes is becoming a critical element in ensuring well-executed contracts and in making certain taxpayer dollars are put to proper use with an emphasis on leadership support, transparency, integrity, and accountability. Senior-level management can assess a firm's capabilities and maturity levels, then implement a road map instilling continuous contract management process improvements within their organization (Rendon, 2016b).

Our research had two purposes. First, we analyzed NAVWAR HQ's contract management processes utilizing the CMMM results. Second, we compared the CMMM results to the PPMAP results and provided recommendations that could help establish a road map for applying contract management process improvement opportunities, workforce training, and knowledge-sharing initiatives (Rendon, 2016).

C. CONCLUSIONS

Our assessment of NAVWAR HQ's contract management processes allow the following research questions to be answered.

(1) What are the maturity levels of each contract management key process area at NAVWAR HQ?

As identified in Chapter IV, Section D, NAVWAR HQ's contract management process maturity levels for Procurement Planning, Solicitation Planning, Solicitation, and Source Selection are assessed as Level 3 "structured." NAVWAR HQ's contract management process maturity level for Contract Administration is assessed as Level 2 *"basic."* NAVWAR HQs contract management process maturity level for Contract Closeout is assessed as Level 1 *"ad hoc."*

(2) How can NAVWAR HQ improve its maturity levels for each contract management key process area identified from the CMMM assessment?

As identified in Chapter IV, Section H, NAVWAR HQ can improve its maturity levels to Level 4 *"integrated"* for Procurement Planning, Solicitation Planning, Solicitation, and Source Selection by fully integrating these processes "with other organizational core processes such as financial management, schedule management, performance management, and systems engineering," as well as periodically using "metrics to measure various aspects of the contract management process to make contracts-related decisions" (Garrett & Rendon, 2015, p. 84).

NAVWAR HQ can improve its maturity level to Level 3 "structured" for Contract Administration by fully establishing, institutionalizing, and mandating these processes "throughout the entire organization," as well as involving "senior organizational management ... in providing guidance, direction, and even approval of key contracting strategy, decisions, related contract terms and conditions, and contract management documents" (Garrett & Rendon, 2015, p. 83).

NAVWAR HQ can improve its maturity level to Level 2 *"basic"* for Contract Closeout by ensuring the process activities—such as contract compliance verification and verifying final payments are made—"have basic contract management processes and

standards established" with "some formal documentation developed" (Rendon, 2008, p. 206).

(3)   How do the process maturity levels compare to NAVWAR HQ's 2020 PPMAP results?

As discussed in Chapter IV, Section G, the CMMM identified process maturity levels as Level 3 structured, while those same areas were rated in the PPMAP as satisfactory or higher. However, Contract Administration and Contract Closeout maturity levels are significantly lower than the other contract management key process areas identified in the CMMM, but the PPMAP still rated those areas as satisfactory.

D.   AREAS FOR FURTHER RESEARCH

We recommend an additional CMMM assessment on NAVWAR HQ the next time they are scheduled to have another PPMAP inspection, to see if implemented improvements and best practices that matured the contract management processes translated to a higher PPMAP inspection rating. An additional comparison further down the road helps solidify the findings pattern that a contract management processes' maturity level aligns with how NAVWAR executes their contracts within regulatory compliance. We also recommend the CMMM assessment comparison against an organization's PPMAP results to be conducted with other Navy HCA commands to determine whether the same pattern exists throughout the Navy's contracting community. Last, we recommend other DOD branches conduct the CMMM assessment comparison against their branch's PPMAP equivalency within an organization.

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