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Enhancing Competition in NAVSEA Procurement: Strategies for Addressing Sole-Source Contracting Challenges

June 2025

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ABSTRACT

The Naval Sea Systems Command (NAVSEA) executes over 60,000 contracting actions annually, yet a significant portion remains non-competitive. This research addresses the growing reliance on sole source contracting within NAVSEA's Supervisor of Shipbuilding, Conversion, and Repair (SUPSHIP) units, particularly in Groton, CT, and Newport News, VA. Using a mixed-methods design grounded in Resource Dependency Theory, the study combines quantitative spend analysis of fiscal years 2020–2023 with qualitative assessments of procurement practices and policy limitations. Findings reveal that over 40% of contract awards were sole source, often due to technical data restrictions, limited supplier bases, and structural procurement barriers. These conditions increase cost, reduce innovation, and pose risks to supply chain resilience. The research recommends strategies to enhance competition, including expanding access to technical data, fostering small business participation, and utilizing alternative acquisition contracting strategies like leader company contracting. These recommendations support NAVSEA's goals of increasing procurement efficiency and resilience while aligning with DoD mandates for competition and industrial base modernization.

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LIST OF ACRONYMS AND ABBREVIATIONS

ACES	Advanced Concept Ejection Seat
BCA	Business Case Analysis
CEMAT	Carrier Engineering Maintenance Assist Team
CICA	Competition in Contracting Act
CNO	Chief of Naval Operations
COR	Contracting Officer's Representative
CPAF	Cost-Plus Award Fee
CPFF	Cost-Plus Fixed Fee
CPIF	Cost-Plus Incentive Fee
DAWIA	Defense Acquisition Workforce Improvement Act
DCMA	Defense Contract Management Agency
DFARS	Defense Federal Acquisition Regulation Supplement
DIB	Defense Industrial Base
DoD	Department of Defense
DoDOIG	U.S. Department of Defense, Office of Inspector General
DON	Department of the Navy
ECP	Engineering Change Proposal
FAR	Federal Acquisition Regulation
FFP	Firm Fixed Price
FMS	Foreign Military Sales
FPDS	Federal Procurement Data System
FY	Fiscal Year
GAO	Government Accountability Office
IDIQ	Indefinite Delivery/Indefinite Quantity
IP	Intellectual Property
IRS	Internal Revenue Service
J&A	Justifications and Approvals
LOE	Level of Effort
LPTA	Lowest Price Technically Acceptable
MAC	Multiple Award Contract

MSMO	Multi-Ship/Multi-Option
NAVSEA	Naval Sea Systems Command
NAVSUP-WSS	Naval Supply Systems Command Weapon Systems Support
NPS	Naval Postgraduate School
OEM	Original Equipment Manufacturer
OUSD	Office of the Under Secretary of Defense
PEO	Program Executive Office
PTAC	Procurement Technical Assistance Center
RAND	Research and Development Corporation
R&D	Research and Development
RDT	Resource Dependency Theory
RFI	Request for Information
RFP	Request for Proposal
SAP	Simplified Acquisition Procedures
SAT	Simplified Acquisition Threshold
SBIR	Small Business Innovation Research
SEMAT	Surface Engineering Maintenance Assist Team
SME	Small and Medium-sized Enterprise
SUPSHIP	Supervisor of Shipbuilding, Conversion, and Repair
TDP	Technical Data Package
UIC	Unit Identification Code
USD A&S	Under Secretary of Defense for Acquisition and Sustainment

I. INTRODUCTION

This chapter introduces the focus of the research. It provides foundational context on government contracting as it relates to the Naval Sea Systems Command (NAVSEA), the Department of the Navy (DON), and the Department of Defense (DoD). It also presents the statement of the problem, the purpose of this study, the organization of the report, and the anticipated benefits and limitations of this research.

A. BACKGROUND

The DoD is the largest contracting entity in the United States, responsible for procuring goods and services critical to national security. In fiscal year (FY) 2020, the DoD obligated approximately $422 billion in contracts, with the Department of the Navy accounting for $144 billion (Bagdoyan, 2021). According to the FY2020 Defense Budge Overview, 29% was allocated to procurement, funding major acquisitions such as battle force ships and airframes to support Navy operations.

NAVSEA, as the Navy's largest systems command, plays a central role in managing these procurement actions, overseeing approximately 60,000 contracting actions annually and operating with a budget of nearly $50 billion (Galinis, 2022). This figure represents roughly one-fourth of the Navy's total budget, underscoring NAVSEA's importance in sustaining fleet readiness and modernization efforts.

From FY2017 to FY2021, NAVSEA's sole-source contracts constituted 34.7% of major ship repair actions, reflecting the challenges of fostering competition in specialized procurement areas (U.S. Department of Defense, Office of Inspector General [DoDOIG], 2022)

Similarly, Naval Supply Systems Command – Weapon System Support (NAVSUP-WSS), a critical component of Navy logistics, reported that only 12.9% of spare procurement contracts and 8.2% of repair contracts were awarded under full and open competition between FY19 and FY20 (Adjei & Hendricks, 2021). These statistics highlight a reliance on sole-source contracting across critical supply chains, raising concerns about

cost inefficiencies, supply chain risks, and limited contractor diversity (Federal Acquisitions Regulation [FAR] 6.302-1, 2025).

The preference for full and open competition in government contracting is well-documented, as it promotes fair pricing, innovation, and a more resilient Defense Industrial Base (DIB). However, sole-source contracting remains prevalent due to various factors, including limited supplier availability, intellectual property restrictions, and the complexity of naval systems. While sole-source contracts can address urgent or highly specialized needs, they also elevate risks such as cost overruns, schedule delays, and supply chain vulnerabilities. Addressing these challenges is vital to improving procurement efficiency and sustaining the Navy's operational readiness.

B. STATEMENT OF THE PROBLEM

The reliance on sole-source contracting within the NAVSEA shipbuilding, repair, and conversion presents significant challenges to procurement efficiency, cost-effectiveness, and operational readiness. Between FY2017 and FY2021, 34.7% of NAVSEA's major ship repair actions were awarded as sole-source contracts, highlighting the Navy's heavy dependence on limited suppliers (DoDOIG, 2022). Sole-source procurement, defined as the practice of awarding contracts to a single vendor when no other suppliers are deemed capable of meeting the requirements (FAR 6.302-1, 2025), often results in higher costs, reduced competition, and increased supply chain risks.

NAVSEA processes over 60,000 contracting actions annually, with a significant portion awarded under sole-source conditions. Recent procurement data (FY2020–FY2023) indicates that over 40% of NAVSEA's ship repair and maintenance contracts were awarded without full competition, due to proprietary data restrictions and a lack of qualified alternative suppliers (DoD, 2023). This dependency on a narrow supplier base limits competition, reducing the Navy's bargaining power and leaving critical operations vulnerable to disruptions. According to DoDOIG's (2022) report, between FY2017 and FY2021, several sole-source depot maintenance contracts managed by NAVSEA experienced significant cost growth and schedule delays. One contract for the USS Vicksburg increased by over $22 million and delayed delivery by more than 14 months

due to unplanned growth work. Similar contracts faced cumulative delays of up to 512 days, highlighting the operational risks associated with limited competition (DoDOIG, 2022). Moreover, the absence of competitive pressures discourages innovation, limits cost reductions, and prevents the development of a more resilient DIB.

The challenges of sole-source contracting are further compounded by three systemic barriers:

1. Intellectual Property (IP) Restrictions – Many defense contractors retain exclusive rights over technical data, preventing the government from opening contracts to competing firms. This practice limits the Navy's ability to seek alternative suppliers and creates long-term dependencies on incumbent vendors (FAR 27.202, 2024).
2. DIB Consolidation – The number of shipbuilders supporting the Navy has significantly decreased over the past several decades, due to consolidation trends that reduced the number of prime contractors in key defense sectors. According to Hensel (2010), by 1998 the number of surface ship contractors had declined by 37.5%, and similar patterns of consolidation occurred across other major sectors. The wave of mergers in the 1990s resulted in giants such as General Dynamics, Huntington Ingalls Industries, and Lockheed Martin dominating shipbuilding and maritime defense systems, which has, in turn, narrowed the Navy's options for competitive contracting in major programs.
3. Procurement Policy Limitations – Existing acquisition regulations and contract structures often favor incumbent contractors by enabling them to leverage institutional knowledge, internal cost-estimating tools, and past performance data that are not readily accessible to new market entrants. These built-in advantages create structural barriers that inhibit competition, making it difficult for new vendors to successfully bid on major defense contracts even when full and open competition is formally mandated (Levenson, 2014).

These barriers not only inflate procurement costs but also create strategic risks, as over-reliance on sole-source providers reduces fleet readiness, increases supply chain fragility, and limits the ability to adapt to evolving operational needs. Addressing this issue requires a comprehensive analysis of NAVSEA's shipbuilding, repair, and conversion procurement environment, including the extent of sole-source awards, the systemic drivers behind this dependency, and potential strategies to mitigate these risks.

By examining these elements, this research aims to provide data-driven recommendations to enhance competition, optimize cost-efficiency, and strengthen procurement resilience. Key solutions include adjusting intellectual property policies, increasing vendor outreach, and fostering small business participation in naval procurement. These strategies are intended to ensure long-term sustainability in NAVSEA's contracting processes while maintaining mission-critical capabilities.

C. PURPOSE OF THE RESEARCH

This research aims to analyze NAVSEA's contracting environment using a mixed-methods design with an embedded case study framework, focused on two of its Supervisor of Shipbuilding, Conversion, and Repair (SUPSHIPs) facilities: Groton, Connecticut, and Newport News, Virginia. The objective is to identify and propose strategies for increasing competition within a predominantly sole-source procurement framework. Sole-source contracting, while sometimes unavoidable due to the complexity and specificity of naval systems, presents significant challenges, including increased costs, supply chain vulnerabilities, and limited opportunities for fostering innovation within the DIB. This study evaluates these challenges and provides actionable recommendations to reduce reliance on sole-source contracts.

The mixed-methods approach integrates quantitative spend analysis of NAVSEA SUPSHIP contracting data from FY20–FY23 with a qualitative synthesis of best practices and federal case studies. The embedded case study design enables a focused examination of procurement operations at two key SUPSHIP locations, while the combination of quantitative and qualitative methods allows for a comprehensive analysis of both systemic barriers to competition and evidence-based strategies to mitigate them.

Building upon the findings of previous studies, this research focuses on three key objectives:

1. Assessing the Prevalence of Sole-Source Contracts - By examining three fiscal years of NAVSEA SUPSHIPs' contracting data (FY20–FY23), this study seeks to determine the percentage of contracts awarded under sole-source conditions. Understanding the scope and scale of sole-source procurement is critical to identifying patterns and areas where competition can be introduced.
2. Identifying Barriers to Competition - This research investigates the systemic, regulatory, and operational factors contributing to NAVSEA SUPSHIP's reliance on sole-source contracting. Key considerations include intellectual property restrictions, limited supplier bases, and the challenges of aligning technical requirements with existing procurement mechanisms.
3. Proposing Strategies to Enhance Competition - Drawing on Resource Dependency Theory (RDT) and industry best practices, this research explores strategies such as leveraging intellectual property and data rights, reverse engineering, interagency requirement pooling, and fostering small business participation. These strategies aim to create a more competitive procurement environment while maintaining mission-critical readiness.

To address these objectives, this research is guided by the following research questions:

- What percentage of NAVSEA SUPSHIP's contracts are awarded under sole-source conditions, and how does prevalence affect the competition rate within its contracting environment?
- What systemic, regulatory, or operational barriers limit NAVSEA SUPSHIP's ability to foster competition within its contracting environment in shipbuilding and repair parts?

- What actionable strategies can NAVSEA SUPSHIP implement to increase competition in a predominantly sole-source environment for shipbuilding and repair parts?

The findings of this study are intended to support NAVSEA SUPSHIP in improving its acquisition practices and advancing the DoD's overarching objectives of promoting competition, encouraging innovation, and achieving increased competition rates.

D. ORGANIZATION OF THE REPORT

This report is structured into five comprehensive chapters, each designed to systematically address the research objectives and provide actionable insights into NAVSEA's contracting environment.

Chapter I introduces the research by providing essential background information on NAVSEA SUPSHIP's contracting operations, including its reliance on sole-source procurement. This chapter presents the statement of the problem, the research questions, and the purpose of the study. It also outlines the organization of the report and discusses the benefits and limitations of the research.

Chapter II is the literature review, which establishes the theoretical and contextual foundation for the study. It begins with an in-depth discussion of resource dependency theory, the primary framework guiding this research. The review continues with an examination of the DIB, a critical network supporting DoD operations, and the supply chain risks associated with sole-source contracting. The chapter also explores the use of spend analysis in identifying opportunities for developing contracting practices. The review concludes with discussions on the contracting life cycle, the dynamics of competitive versus sole-source procurement, and strategies for fostering competition, including the Better Buying Power initiatives and leader-follower contracting models.

Chapter III details the methodology employed in this research. A mixed-methods approach is used, combining NAVSEA SUPSHIP quantitative analysis of contracting data from FY20–FY23 with qualitative evaluation of industry best practices and case studies relevant to sole-source contracting. The quantitative component involves a comprehensive

spend analysis to identify patterns and concentrations of sole-source awards, while the qualitative component examines operational strategies and historical cases to uncover effective methods of fostering competition. Together, these methods provide a multi-dimensional understanding of the barriers to competition and support the development of actionable procurement recommendations.

Chapter IV presents the analysis, findings, and recommendations. It includes a thorough examination of the spend-analysis to assess the prevalence and impact of sole-source contracting. The chapter evaluates systemic factors that limit competition and explores strategies to address these challenges. Proposed strategies include leveraging intellectual property rights, reverse engineering, requirement pooling, and initiatives to increase small business participation. The analysis is supported by evidence from NAVSEA SUPSHIP's contracting data and industry's best practices.

Chapter V concludes the report by summarizing the key findings and their implications for NAVSEA SUPSHIP's procurement strategies. Actionable recommendations are provided to foster competition and enhance supply chain resilience. The chapter concludes with suggestions for further research to continue addressing challenges within the defense acquisition environment.

E. BENEFITS AND LIMITATIONS OF THE RESEARCH

This research offers several important benefits to NAVSEA and the broader defense acquisition community. By analyzing three fiscal years (FY2020 to FY2023) of contracting data from two key SUPSHIP offices; Groton, Connecticut, and Newport News, Virginia, the study contributes to a deeper understanding of the prevalence and impact of sole-source contracting. In doing so, it supports the DoD's strategic priorities of fostering innovation, enhancing industrial base resilience, and promoting full and open competition.

The study also identifies systemic barriers to competition and proposes actionable strategies to mitigate sole-source dependency. These strategies are grounded in a mixed-methods approach that incorporates both quantitative data analysis and a qualitative review of acquisition best practices. By leveraging insights from Resource Dependency Theory

and government case studies, the research presents NAVSEA with feasible options to expand supplier diversity, promote small business participation, and enhance acquisition agility. The results may also inform broader procurement policy reform across the DoD and other federal agencies facing similar challenges.

Despite its contributions, the research is subject to several limitations. First, the scope of the analysis is confined to prime-level award data and does not include subcontracting activity. As a result, the study may not capture the full extent of vendor participation at lower tiers, including small or non-traditional firms. Second, the research relies exclusively on publicly available contract records and does not include access to internal acquisition planning documents or market research reports. These materials could have provided additional insight into decision-making processes and policy implementation.

Third, the study does not include interviews or firsthand input from NAVSEA acquisition personnel, contracting officers, or industry stakeholders. This limits the ability to assess how policies and strategies are applied in practice. Fourth, while the best practices identified are drawn from reputable federal case studies, differences in mission scope, acquisition authority, or program complexity may limit their direct applicability to NAVSEA SUPSHIP operations.

Finally, the data analyzed spans only three fiscal years. While this window captures recent trends, it may not reflect longer-term shifts in policy, industrial base dynamics, or acquisition strategy resulting from post-pandemic adjustments or emerging threats.

Notwithstanding these limitations, the study provides a strong foundation for understanding sole-source contracting patterns and proposing informed, strategic reforms. Its findings and recommendations offer a critical first step toward improving competition within NAVSEA SUPSHIP and advancing broader acquisition transformation goals across the defense enterprise.

F. SUMMARY

This chapter introduced the scope and objectives of the research, focusing on the challenges posed by sole-source contracting within the shipbuilding and repair facilities of NAVSEA. It provided background information on NAVSEA SUPSHIP's contracting environment, the DoD's reliance on sole-source procurement, and the implications for cost efficiency, supply chain resilience, and innovation within the DIB.

The chapter then outlined the problem statement, highlighting the risks associated with sole-source contracting, including cost overruns, limited contractor diversity, and reduced flexibility in addressing operational requirements. The purpose of the research was established, emphasizing the need to analyze NAVSEA's contracting practices and identify actionable strategies to foster competition. The organization of the report was also detailed, providing a roadmap of the five chapters and their contributions to addressing the research questions.

The benefits and limitations of the research were also discussed. While this study offers valuable insights into NAVSEA's contracting environment and provides practical recommendations to enhance competition, its scope is limited to three fiscal years of data and two selected Unit Identification Commands (UICs). Despite these constraints, the research lays a foundation for further exploration and supports ongoing efforts to improve efficiency and innovation within the DoD's procurement processes.

The next chapter, the literature review, builds on this context by exploring relevant theories and previous research. It introduces Resource Dependency Theory, which provides a framework for understanding how NAVSEA's reliance on limited suppliers, shapes procurement outcomes. Chapter II also reviews policy evolution, procurement strategies, and market dynamics, which help explain the persistence of sole-source contracting in defense acquisition.

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II. LITERATURE REVIEW

This chapter synthesizes the theoretical and contextual frameworks that underpin the analysis of NAVSEA's contracting practices and the challenges posed by sole-source procurement. It begins with an in-depth examination of Resource Dependency Theory, the primary theoretical foundation of this research, which provides insights into the dynamics of organizational reliance on external entities for critical resources. The chapter then delves into the DIB, exploring its vital role in supporting DoD operations and the implications of its consolidation on competition and innovation.

Further, the chapter investigates supply chain risks, particularly those exacerbated by sole-source contracting, and examines how these risks impact NAVSEA SUPSHIP's operational resilience and procurement efficiency. The discussion transitions to the utility of spend analysis as a strategic tool for identifying inefficiencies and opportunities within the procurement process. Finally, the chapter evaluates strategies for fostering competition, including the implementation of Better Buying Power initiatives and the adoption of leader-follower contracting models, which aim to enhance supplier diversity, reduce costs, and strengthen the defense procurement ecosystem.

This comprehensive review establishes a robust foundation for the methodology and analysis presented in subsequent chapters, offering both theoretical insights and practical frameworks to address NAVSEA's contracting challenges.

A. RESOURCE DEPENDENCY THEORY

This study applies Resource Dependency Theory (RDT) as its primary analytical framework to examine NAVSEA SUPSHIP's contracting environment and reliance on sole-source procurement. RDT is particularly well-suited to this research because it focuses on how organizations respond to external constraints when critical resources such as technical knowledge, production capacity, or intellectual property are controlled by outside actors. In the context of NAVSEA, this theory offers a structured way to understand the persistent reliance on a limited number of prime contractors and the resulting impact on procurement flexibility, cost efficiency, and industrial resilience.

Originally articulated by Pfeffer and Salancik (1978), RDT posits that organizational decision-making is shaped by dependency relationships with external entities that control essential resources. Reitz et al. (1979) further emphasized that such dependencies create power imbalances that can compromise strategic autonomy. These dynamics are directly applicable to NAVSEA's challenges in cultivating competition, particularly when technical data rights, production expertise, and established industrial relationships are monopolized by a few firms.

By using RDT as a lens, this research investigates how these dependencies manifest in NAVSEA SUPSHIP's sole-source contract awards and identifies structural opportunities for reform. The theory provides both an explanatory model for observed behaviors and a prescriptive guide for designing interventions to reduce reliance on dominant suppliers. It also supports the study's broader aim: to propose actionable, policy-relevant strategies for expanding competition and enhancing industrial base resilience.

Figure 1. NAVSEA SUPSHIPs Resource Dependency Theory. Adapted from NAVSEA (2025).

1. Literature Reviews that Support Resource Dependency Theory

The application of Resource Dependency Theory to procurement, particularly within the context of NAVSEA SUPSHIP, is underpinned by a robust body of literature that emphasizes the criticality of managing inter-dependencies and minimizing vulnerabilities that arise from resource reliance. This review synthesizes significant scholarly contributions that elucidate RDT's relevance to the procurement challenges faced by NAVSEA:

a. Foundational Texts on RDT

The seminal work of Pfeffer and Salancik (1978) serves as a cornerstone for understanding how organizations navigate and negotiate their external dependencies. Their exploration of power dynamics among organizations elucidates adaptive strategies that can be employed to manage risks associated with sole source contracting, including the negotiation leverage that arises from dependency.

b. Sector-Specific Applications

A plethora of studies have examined the implications of RDT within sectors analogous to defense procurement, providing insightful parallels. Notably, research conducted on the aerospace industry highlights the vulnerabilities stemming from a concentrated reliance on a limited number of major contractors, leading to inefficiencies and stunted innovation (Yildiz, 2022). These findings are particularly relevant to NAVSEA, which similarly finds itself dependent on a few dominant shipbuilders, raising concerns about cost overruns and technological stagnation.

c. Regulatory and Policy Analyses

The influence of regulatory frameworks in shaping procurement practices is a recurrent theme in academic discourse. Works by Cohen and Eimicke (2008) delve into how various policy tools can be strategically employed to mitigate dependency risks and foster a competitive procurement environment. These strategies align directly with NAVSEA's objectives of enhancing supplier diversity and reducing vulnerability to any single contractor's influence.

d. Empirical Studies in Defense Procurement

Comprehensive empirical investigations into the procurement practices of the DoD reveal the inherent risks associated with concentrated resource arrangements. For instance, research by Hensel (2010), conducted on the management challenges of sole-source contracts underscores the necessity for diversification as a proactive risk mitigation tactic. By advocating for a broader supplier base, these studies suggest that NAVSEA can enhance its operational resilience and promote competitive practices.

e. Evolving Theoretical Developments in Resource Dependency Theory

Hillman et al. (2009) provides a comprehensive update on Resource Dependency Theory, highlighting several avenues by which organizations manage external dependencies beyond traditional procurement relationships. These include strategic actions like mergers, alliances, political engagement, and executive succession, all of which offer tools for reshaping power dynamics. Importantly, recent RDT research differentiates between mutual dependence and power asymmetry, an especially relevant distinction in NAVSEA's procurement environment, where dominant contractors may exert disproportionate influence. Furthermore, the theory's emphasis on the dynamic and cyclical nature of dependency sheds light on how NAVSEA's efforts to diversify suppliers or adopt new acquisition models might inadvertently generate new dependencies. Incorporating these expanded RDT perspectives can enhance understanding of the structural challenges NAVSEA faces in promoting competition, innovation, and resilience within the defense industrial base.

2. Challenges of Sole Source Contracting in NAVSEA SUPSHIPs: Implications of Operational Effectiveness and Procurement Strategy

While sole-source contracting serves as a critical indicator of resource dependency within the NAVSEA SUPSHIPs', which can be attributed to its' over-reliance on a limited number of contractors who possess specialized expertise and capabilities, particularly in areas vital to the Navy's operational effectiveness, such as shipbuilding, advanced weapon systems development, and life cycle support, its' overreliance could introduces a range of

significant challenges that can impact NAVSEA's SUPSHIPs long-term operational effectiveness and procurement strategy.

a. Limited Alternatives

The predominance of major contractors, such as General Dynamics and Huntington Ingalls Industries, limits SUPSHIP's ability to diversify its supplier base. These companies have solidified their positions as cornerstone players in the defense sector, creating a substantial barrier for new entrants and smaller firms looking to compete. As highlighted in RDT, this concentration of critical resources among a few entities can lead to a pronounced power imbalance. SUPSHIP's negotiating leverage is consequently diminished, leaving it with fewer strategic options. This situation can result in over-reliance on these contractors, which may hinder the organization's ability to adapt to changing needs or pursue more cost-effective solutions.

b. Vulnerability to Price Escalation

The dependency on sole-source contractors places NAVSEA SUPSHIP at a heightened risk of escalating costs. When contractors know that they have a unique market position with little to no competition, they will leverage this advantageous circumstance during contract negotiations to impose higher prices. This dynamic is particularly concerning in the context of government budgeting processes, where unanticipated cost increases can lead to budget overruns. Such overruns will expose NAVSEA SUPSHIP to program management risk such as cost, schedule, and performance. The potential for delays in critical defense projects can have far-reaching implications for national security and operational readiness (Rendon & Snider, 2019).

c. Innovation Stagnation

The absence of competition in sole-source contracting can diminish the incentive for contractors to innovate. When companies are assured of their contracts regardless of their performance in comparison to potential competitors, the urgency to invest in new technologies or to improve existing processes often wanes. Resource Dependency Theory emphasizes that such dependencies can lead to a stagnation of organizational efficiency

and adaptability. This stagnation can compromise the Navy's technological advantages, particularly in a rapidly evolving defense landscape where innovation is vital for maintaining operational superiority.

B. NAVSEA BACKGROUND

NAVSEA plays a critical role in the Navy's overall defense posture, supporting its capacity to project force and uphold control in maritime domains. It is responsible for the design, construction, delivery, and sustainment of ships, submarines, and related systems, ensuring they meet performance expectations within budget and schedule constraints. As the largest of the Navy's five systems commands, NAVSEA is responsible for the full life cycle management of the U.S. Navy's ships and submarines, encompassing design, construction, maintenance, modernization, and disposal. This includes the development and sustainment of complex combat systems and associated warfare technologies. NAVSEA's oversight extends to both nuclear and non-nuclear platforms, ensuring their readiness and operational effectiveness throughout their service life. Below is the NAVSEA organization's overview:

- NAVSEA consists of headquarters leadership, directorates, associated Program Executive Offices (PEOs), and various field units. Collectively, these entities are responsible for designing, acquiring, constructing, and sustaining ships, submarines, and combat systems that fulfill the operational needs of today's Fleet and those anticipated in the future (Bannister, 2021).
- NAVSEA is the largest of the Navy's six systems commands, it operates with an annual budget exceeding over $50 billion and employs over 86,000 personnel across forty-two locations worldwide (NAVSEA, n.d.). NAVSEA (n.d.) also states that the command oversees the design, construction, procurement, and sustainment of the Navy's ships, submarines, and combat systems. It also manages over 60 Acquisition Category programs; major defense programs classified based on their cost,

complexity, and oversight requirements, and oversees billions in annual foreign military sales (Galinis, 2022).

Galinis (2022) notes that NAVSEA operates thirty-three facilities across sixteen states, making it the most extensive of the Navy's systems commands. It plays a central role in the Navy Enterprise by aligning manpower and resources to support Fleet readiness. As a Provider Command, NAVSEA works with resource sponsors to ensure that the Navy is properly equipped, leveraging its infrastructure to efficiently deliver defense capabilities to the nation.

NAVSEA is also charged with setting and upholding technical authority for the design and operation of combat systems. It leverages its technical expertise to establish standards that guide sound engineering practices and ensure safe, dependable system performance.

Figure 2 depicts NAVSEA's Enterprise Strategy and Lines of Effort (LOEs)

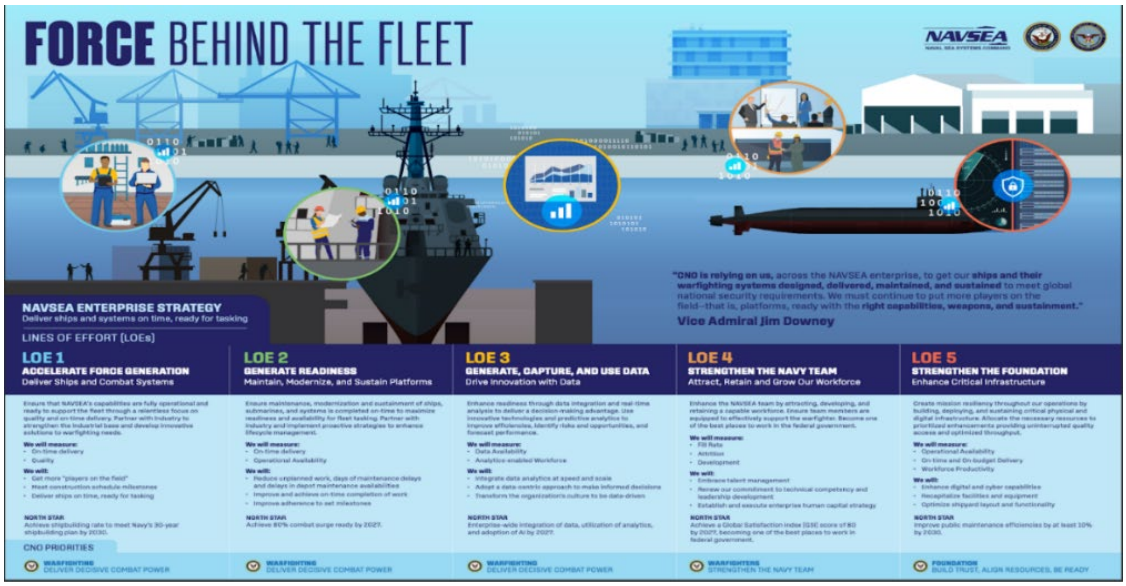

Figure 2. NAVSEA Enterprise Strategy 2025. Source: NAVSEA (2025)

Figure 3 depicts the U.S. Navy's organizational structure that flows down from the Secretary of the Navy down the different SUPSHIP locations.

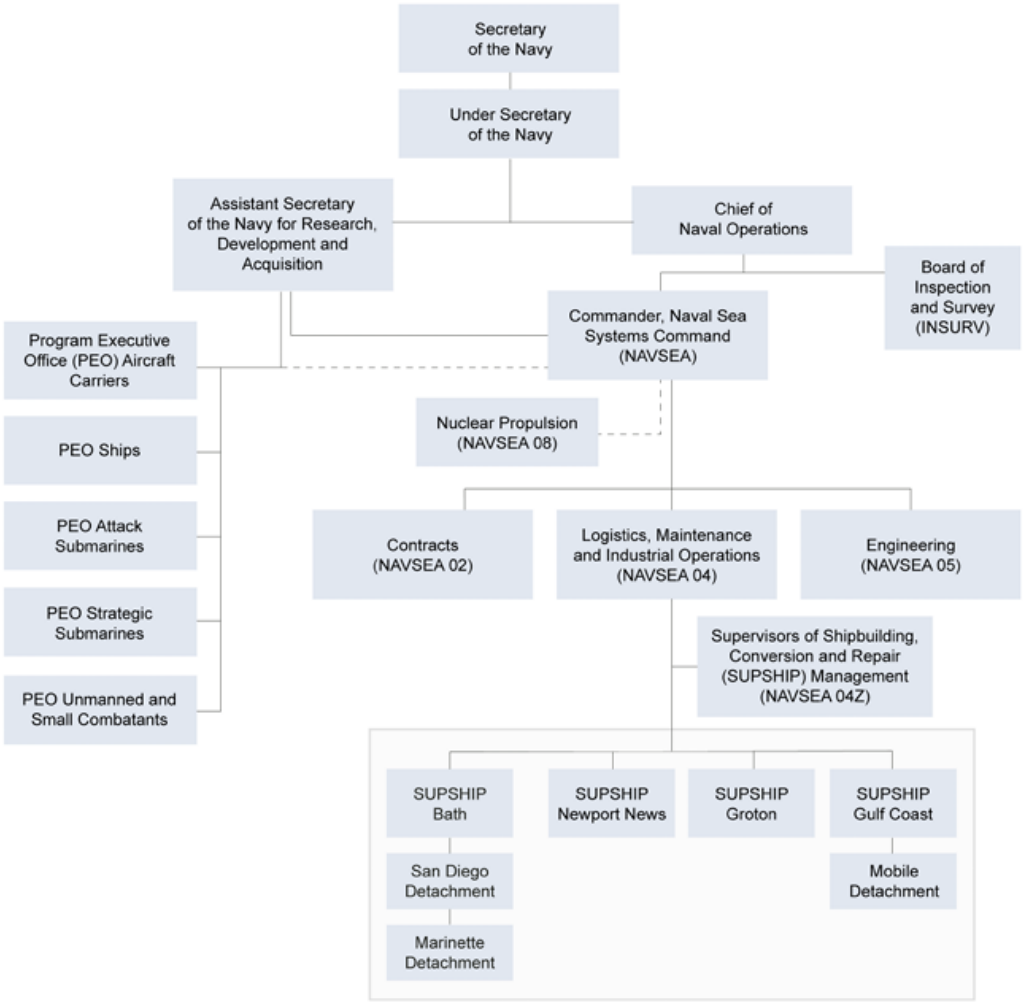

Figure 3. Navy Organizational Structure Supporting Shipbuilding Programs. Source: Oakley (2022)

Figure 4 depicts NAVSEA's current command leadership organizational chart.

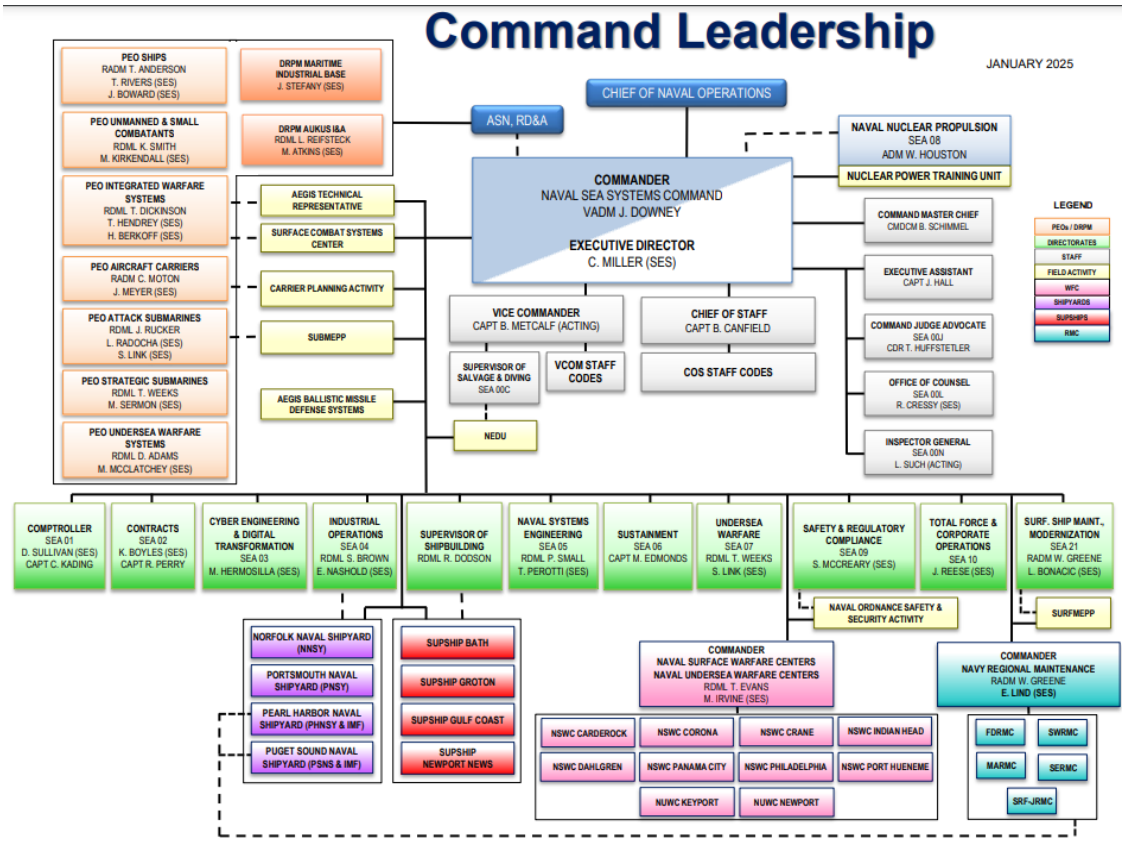

Figure 4. NAVSEA Command Leadership 2025. Source: NAVSEA (2025)

1. Overview of NAVSEA's Role in Defense Contracting

The NAVSEA Contracts Directorate (SEA 02) serves as the central authority for contracting activities across the NAVSEA enterprise. Its responsibilities include developing and issuing acquisition policies, overseeing the full life cycle of major contract actions such as solicitation, award, administration, and closeout, and supervising contracting operations at subordinate commands (see Table 1). SEA 02 also ensures compliance with procurement regulations and the proper use of delegated acquisition authority. In addition, it leads to the development and professional oversight of NAVSEA's contracting workforce and competencies.

Table 1. NAVSEA 02 Contract Divisions. Adapted from NAVSEA (2024).

NAVSEA 02 POLICY, PROCUREMENT, AND OVERSIGHT			
Division	**Name**	**Responsibilities**	**Common Contract Types**
SEA 021	Contract Policy and e-Business Operations Division	Oversee contract policy, policy dissemination, procurement surveillance, workforce development and training, Contracting Officer Representative (COR) program management, contract process automation, electronic accounts management, electronic systems operations, and contract data management.	Not specified (supports internal policy and system oversight rather than contract awards)
SEA 022	Shipbuilding Contract Division	Manages the contracting for nuclear aircraft carriers and complex overhauls, surface combatants, amphibious assault ships, support ships, submarines, small craft, auxiliary mission ships, special mission ships, and Foreign Military Sales (FMS) for combatant and patrol craft.	CPFF (Cost-Plus Fixed Fee), CPAF (Cost-Plus Award Fee), CPIF (Cost-Plus Incentive Fee)
SEA 024	Fleet Support Contract Division	Responsible for ship/submarine overhaul and repair, diving and salvage services, damage control systems, Small Business Innovation Research (SBIR) Phase I and II contracts, industrial facilities, leases, and various ship systems.	CPFF, IDIQ MSMO (Indefinite Delivery/Indefinite Quantity Multi-Ship/Multi-Option)
SEA 025	Surface Systems Contract Division	Supports the Program Executive Office Integrated Warfare Systems (PEO IWS) mission. Responsible for contracting shipboard weapons (e.g., missile systems, naval guns, countermeasure systems), detection systems (e.g., radars, Cooperative Engagement Capability systems), and overall combat systems.	Hardware: FFP (Firm Fixed Price), FPIF (Fixed-Price Incentive Firm); Services: CPFF, CPAF, CPIF
SEA 026	Undersea Warfare Systems	Overseas contracting for undersea weapons, detection systems, and combat systems. Also responsible for services contracting via the	Hardware: FFP, FPIF; Services: CPFF, CPAF, CPIF

NAVSEA 02 POLICY, PROCUREMENT, AND OVERSIGHT			
Division	**Name**	**Responsibilities**	**Common Contract Types**
	Contract Division	SeaPort portal and simplified acquisition procedures (SAP) for NAVSEA headquarters.	

The NAVSEA SEA 02 organizational chart is illustrated in Figure 5.

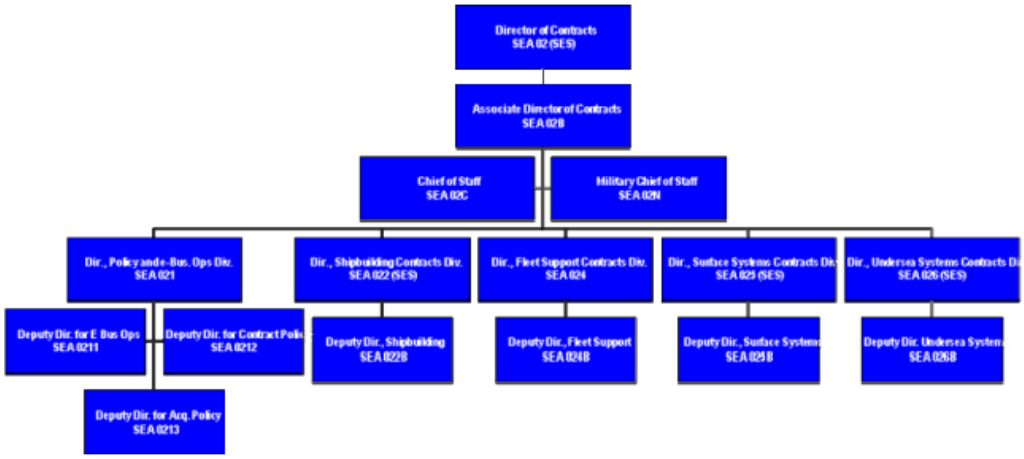

Figure 5. Contracts SEA 02 Organizational Chart. Source: Brown (2023).

In fiscal year 2022 alone, NAVSEA managed a budget exceeding $50 billion, underscoring its pivotal role in defense procurement and innovation (Galinis, 2022).

NAVSEA's procurement operations extend across numerous programs, ranging from innovative shipbuilding projects like the Gerald R. Ford aircraft carrier class to modernization initiatives for aging fleet assets. These activities are governed by the FAR and the Defense Federal Acquisition Regulation Supplement (DFARS), which aim to ensure efficiency, transparency, and fairness in defense acquisitions. Despite these regulations, NAVSEA's contracting environment is uniquely challenging due to the

technical sophistication and specificity of naval systems. For example, the construction of a Virginia-class submarine involves integrating over one million individual components, many of which require highly specialized manufacturing capabilities (Smith & Jones, 2020).

The expansive scope and technical demands of NAVSEA programs often make it necessary to rely on sole-source contracts, especially when dealing with systems that involve proprietary designs or require original manufacturer's technical expertise. Although this method helps maintain continuity and mission reliability, it may also hinder innovation and limit opportunities for cost savings. Research by the RAND Corporation highlights that shifts in the defense industrial base and growing system complexity have complicated the contracting process, especially in low-competition settings where conventional acquisition strategies do not effectively encourage innovation or cost-effective practices (Wong et al., 2022, pp. 14–16).

2. NAVSEA Supervisors of Shipbuilding, Conversion, and Repair (SUPSHIP)

The SUPSHIP are essential field activities under NAVSEA, the largest of the Navy's five systems commands. These offices serve as NAVSEA's forward-deployed authority at major private shipyards throughout the country, overseeing the execution of shipbuilding and ship repair contracts. SUPSHIPs are charged with ensuring both technical compliance and contractual fidelity throughout the life of Navy ship acquisition programs.

a. Historical Background

The roots of the SUPSHIP structure date back to the early 20th century when the U.S. Navy recognized the growing need for direct oversight of increasingly complex contracts with private shipbuilders. During World War II, the Navy formally established resident offices at commercial shipyards to manage the dramatic expansion in warship construction. These offices played a vital role in ensuring timely delivery, adherence to technical specifications, and cost control; functions that laid the foundation for today's SUPSHIP framework.

By the late 1960s, the "Supervisor of Shipbuilding" designation had been formalized, and in 1974, these offices were consolidated under the newly created NAVSEA, which unified several engineering and procurement bureaus. This reorganization enhanced standardization strengthened quality assurance, and improved life cycle management across the Navy's expanding fleet.

NAVSEA itself comprises four public shipyards, three detachments, eight warfare centers, and four principal SUPSHIP field sites across the United States. The command's headquarters is located at the Washington Navy Yard in Washington, D.C., The four public shipyards are in Pearl Harbor, Hawaii; Kittery, Maine; Portsmouth, Virginia; and Bremerton, Washington. NAVSEA's warfare centers span eight locations: Dahlgren, Virginia; Keyport, Washington; Carderock, Maryland; Port Hueneme, California; Panama City, Florida; Indian Head, Maryland; Crane, Indiana; and Newport, Rhode Island. The primary SUPSHIP locations for shipbuilding oversight are in Bath, Maine; Newport News, Virginia; Groton, Connecticut; and Pascagoula, Mississippi (see Figure 6).

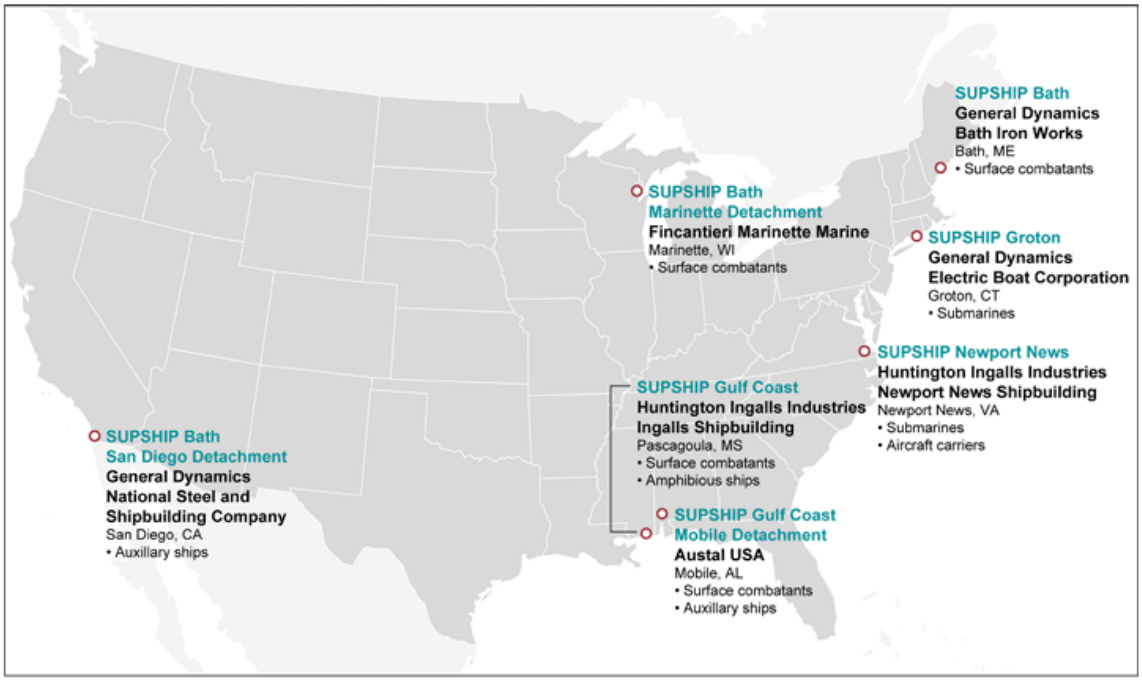

Figure 6. Locations of Major Navy SUPSHIPs. Source: Oakley (2022)

b. Modern SUPSHIP Role and Structure

Today, SUPSHIP offices are strategically located alongside the nation's largest private shipyards in Bath, Groton, Gulf Coast, and Newport News to provide direct oversight for the Navy's most critical shipbuilding programs. With a combined workforce of over 1,400 military, civilian, and contractor personnel, SUPSHIPs operate under NAVSEA's broader mission to design, build, deliver, and maintain Navy ships and systems on time and on cost (NAVSEA, n.d.).

Each SUPSHIP office is responsible for a suite of duties that includes:

- Contract Management: Overseeing the execution of acquisition contracts worth billions of dollars while ensuring adherence to FAR, DFARS, and Navy-specific regulations.
- Engineering and Technical Oversight: Acting as the Navy's technical authority on-site, including managing tests, trials, and system verifications.
- Quality Assurance: Ongoing evaluation and inspection of shipbuilder procedures, including welding quality, structural soundness, propulsion performance, and integration of electronic systems.
- Business and Financial Operations: Management of cost estimation, earned value analysis, payment processing, and monitoring of project timelines.

According to NAVSEA (n.d.), SUPSHIPs collectively manage shipbuilding contracts valued at over $193 billion, supporting both surface ship and submarine programs. Their work spans the full ship life cycle, from initial construction to post-delivery support and final acceptance by the Navy's fleet commands.

c. Integration with the Shipbuilding Enterprise

SUPSHIPs do not operate in isolation. They work in close coordination with PEOs, warfare centers, the Defense Contract Management Agency (DCMA), and various other

stakeholders in the Navy's acquisition ecosystem. This integration ensures that engineering requirements, fleet feedback, and cost-performance goals are synchronized throughout the shipbuilding process.

SUPSHIP personnel often serve in mission-critical roles such as Contracting Officer Representatives (CORs), quality inspectors, production supervisors, and trial board members. Their embedded presence at shipyards reinforces accountability and ensures the delivery of mission-ready platforms to the Fleet.

C. OVERVIEW OF CONTRACT PROCUREMENT METHODS

Federal procurement law, under 10 United States Code (USC) 2304 and 41 USC 253, directs contracting officers to ensure full and open competition when soliciting offers and awarding government contracts. Certain exceptions to this requirement are provided in FAR Subparts 6.2 and 6.3, which address circumstances permitting limited or noncompetitive procedures. Within this framework, the two procurement methods are most relevant to NAVSEA's operations and the SUPSHIP contracting environment:

- Simplified Acquisition Procedures – FAR Part 13
- Contracting by Negotiation – FAR Part 15

1. Simplified Acquisition Procedures (FAR Part 13)

Simplified acquisition procedures, as defined under the Simplified Acquisition Threshold (SAT) in FAR 2.101, are intended to make the procurement process more efficient. These procedures help lower administrative costs, expand access to federal contracting opportunities for small and disadvantaged businesses including those owned by women, veterans, service-disabled veterans, and HUBZone participants to further enhance overall contracting efficiency and cost-effectiveness, and reduce unnecessary burdens on both federal agencies and vendors (FAR 13.002, 2025).

2. Contracting by Negotiation (FAR Part 15)

The most used method for high-value and complex acquisitions, including sole-source contracting, is Contracting by Negotiation, governed by FAR Part 15. This method

provides significantly more flexibility than other acquisition procedures and allows for both competitive and noncompetitive award scenarios.

Contracting by negotiation is typically used when:

- Requirements are complex or not easily defined by rigid specifications.
- Price alone is not the sole determining factor.
- Discussions and clarifications with offerors may be necessary; and
- The government must evaluate trade-offs between technical capability, price, and other factors.

This method supports both full and open competition and justified sole-source awards, making it particularly suitable for SUPSHIP contracts involving proprietary systems, platform sustainment, or ship construction activities where incumbent vendors control essential data or infrastructure.

Solicitations under FAR Part 15 are issued as Requests for Proposals (RFPs). Contractors may or may not know whether competition exists, and pricing is established based on cost realism, past performance, technical merit, and negotiation, not solely on market pressure.

The flexibility inherent in Contracting by Negotiation is critical for managing the technical and operational complexities associated with naval shipbuilding, systems integration, and life cycle sustainment. It also provides the legal structure to pursue sole-source contracts under approved Justifications and Approvals (J&As) when competition is not feasible.

Figure 7 shows the differences between Simplified Acquisition and Contracting by Negotiation as the two main contracting methods utilized in sole source contracts.

Feature	FAR Part 13 – Simplified Acquisition	FAR Part 15 – Contracting by Negotiation
Purpose	Streamlined acquisitions for lower-dollar, less complex buys	Flexible framework for complex, high-value, or sole-source acquisitions
Dollar Threshold	Generally ≤ $250,000 (Simplified Acquisition Threshold)	Typically > $250,000; no upper limit
Type of Solicitation	Request for Quotation (RFQ)	Request for Proposal (RFP)
Competition Requirement	Encouraged but not always required (can use set-asides)	Full and open competition or justified sole-source
Use in SUPSHIP	Limited use—routine or small purchases	Primary method for shipbuilding, sustainment, and sole-source contracts
Evaluation Criteria	Primarily price; minimal technical trade-offs	Multiple factors: technical, cost, past performance, etc.
Discussion with Offerors	Generally not conducted	Permitted and often essential
Complexity of Requirements	Simple, routine procurements	Complex or specialized systems and requirements
Applicable to Sole Source?	Rarely	Yes—supports both competitive and noncompetitive awards
Advantages	Speed, administrative simplicity, promotes small business	Flexibility, strategic sourcing, accommodates proprietary constraints

Figure 7. Comparison of FAR Part 13 and FAR Part 15 Procurement Methods. Adapted from FAR (2025).

3. Navy Shipbuilding Contract Types

In Navy shipbuilding, the choice of contract type plays a critical role in determining not only the final cost of a vessel but also its quality, schedule, and risk allocation. Because ship construction involves complex systems, long timelines, and evolving requirements, contract structures must strike a balance between incentivizing performance and managing financial risk. Figure 8 summarizes the two primary contract types that the Navy uses in its shipbuilding program, highlighting their respective applications, responsibilities, risk-sharing mechanisms, and their impact on quality outcomes (Mackin, 2013). Each contract type offers different incentives for controlling costs and meeting quality standards. These contracts are typically aligned with the stage of the ship class life cycle: cost-type contracts are common for lead ships where uncertainty is higher, while fixed-price contracts are applied to follow-on ships where production processes are more mature.

Type of contract	Contract type use and application	Navy responsibility	Shipbuilder responsibility	Who assumes the risk of cost overruns	How quality is affected
Cost-reimbursement contracts with incentive fee	Used when: Requirements not well-defined or lack of knowledge does not permit costs to be sufficiently estimated to use a fixed-price contract. Applications: Commonly used on lead ships.	Pays contractor's allowable costs incurred, to the extent prescribed by the contract. Ship buyer is not guaranteed a completed ship at the expected level of quality within cost or schedule estimates.	Shipbuilder makes good faith effort to meet ship buyer's needs within the estimated cost.	Navy	Incentive fee may allow shipbuilder to earn higher fee if costs are kept low (e.g., by minimizing rework).
Fixed-price-incentive (firm target) contract	Used when: A ceiling price, target cost, target profit and profit adjustment formula can be established that will provide a fair and reasonable incentive. Provides for the contractor to assume an appropriate share of the risk. Applications: Commonly used for follow-on ships in a class.	Navy pays fixed target price which includes shipbuilder's profit, but agrees to share cost overruns (or underruns) up to a ceiling price.	Shipbuilder delivers a ship at the expected level of quality, meeting all requirements and specifications as specified in the contract at or below the ceiling price.	Shared risk between Navy and shipbuilder up to agreed ceiling price. Shipbuilder generally bears most risk over that amount.	The Navy and the shipbuilder share cost overruns up to the agreed ceiling, which on previous contracts has been up to 138 percent of the target cost.

Figure 8. Navy Shipbuilding Contract Types. Source: Mackin (2013)

D. DEFINING SOLE SOURCE CONTRACTING AND ITS IMPLICATIONS

Before delving into the formal definition of sole-source contracting, it is essential to recognize the broader operational context in which this procurement strategy is employed. Sole-source awards are not inherently problematic. In fact, they often emerge as a necessary solution when time-sensitive requirements, mission-critical systems, or highly specialized components preclude open competition. Within organizations such as NAVSEA, this method becomes particularly relevant in ship maintenance, weapons systems sustainment, and technical data acquisitions. These are domains where alternatives are scarce or technically infeasible. Understanding the justification framework, frequency of use, and strategic trade-offs involved in sole-source awards provides a foundation for analyzing both their practical advantages and systemic risks. This framing helps clarify why the following definition and its associated regulatory basis matter in the context of defense acquisition.

1. Definition

Sole-source contracting is a procurement approach in which a contract is awarded to a single supplier without a competitive bidding process. This method is sanctioned under the FAR in specific situations where competition is not feasible. Such circumstances include cases where the goods or services required are available from only one supplier due to proprietary technology, unique expertise, or urgent operational needs (FAR 6.302, 2025). While sole-source contracting serves as a practical solution to meet critical mission demands, it also introduces several challenges that warrant careful consideration.

In specific circumstances, the use of sole-source contracting has become a vital approach, particularly in the context of bridge contracting. This type of contracting is characterized as a non-competitive action, necessitating comprehensive justification to validate its implementation.

The process often involves adhering to the guidelines set forth in the FAR, specifically Part 6, which addresses competition requirements, or Part 13 which pertains to Simplified Acquisition Procedures. Furthermore, limited sources justification may be required in accordance with FAR Subpart 8.405-6, especially when there is a need to procure goods or services from a restricted number of suppliers. In certain instances, an exception to the fair opportunity requirement, as per FAR Subpart 16.505(b), may be invoked, allowing agencies to bypass the standard competitive bidding process to expedite urgent procurements.

These contracting measures are typically employed to ensure the uninterrupted provision of the current product or service, or a comparable alternative, during periods marked by delays in finalizing and awarding follow-on contracts. Such delays can stem from various factors, including but not limited to bid protests lodged by unsuccessful offerors, extensive modifications to government procurement specifications that necessitate additional review and approval processes, delays in contract awards due to administrative bottlenecks, or the challenges encountered by an inexperienced and overwhelmed acquisition workforce grappling with the complexities of government

procurement. The goal of a bridge contract is always to maintain operational continuity while navigating the intricacies of federal contracting regulations (Longo, 2020).

For an agency to substantiate the use of a sole-source contract, several key characteristics must be clearly identified and articulated. These characteristics typically include:

a. Regulatory Exception

Sole-source contracting is governed by the FAR, which outlines specific circumstances under which this type of contracting is permissible. Agencies must ensure that their rationale for choosing a sole-source contract aligns with the regulatory framework and adheres to all mandatory justifications. This includes properly documenting the decision-making process to demonstrate compliance with relevant laws and regulations.

b. Exclusive Vendor Relationship

A fundamental justification for opting for a sole-source contract often revolves around the existence of a unique vendor relationship. This may arise from the vendor's specialized capabilities, expertise, or proprietary technologies that are not available from other contractors. In cases where intellectual property rights are involved, such as patented processes or exclusive licenses, the agency may find itself limited to a single vendor capable of fulfilling the contract requirements. It is crucial for the agency to clearly articulate why the vendor is considered essential to the success of the project.

c. Lack of Competition

When opting for a sole-source contract, a critical factor to highlight is the absence of viable competitors in the market. This lack of competition can create a scenario where the selected contractor holds significant leverage over critical contract elements such as costs, timelines, and performance metrics. Without competing bids, the contractor may lack incentive to provide the most economical or efficient solution, which can lead to increased risks for the agency. Consequently, the agency must carefully assess and document the implications of reduced competition on the overall contract value and the

associated risks, ensuring that all stakeholders understand the potential impact of this decision.

2. Implications

One notable benefit of sole-source contracting is its ability to accelerate the procurement process, particularly when supporting critical naval systems that require specialized expertise or hard-to-source components. For NAVSEA, ensuring timely access to essential repair services and original parts is a key factor in maintaining fleet readiness. According to the Department of Defense Inspector General, sole-source awards were often necessary due to factors such as unavailable dry-dock capacity or a lack of willing bidders, rather than by design. These constraints have led to higher expenses and significant schedule delays, affecting the Navy's ability to return ships to service on time and sustain operational capabilities (DoDOIG, 2022).

While sole-source contracting can speed-up procurement, it also presents notable disadvantages. The absence of competition may lead to inflated costs, as suppliers have less incentive to offer competitive pricing. Additionally, reliance on a single supplier introduces supply chain vulnerabilities; if the sole supplier encounters production delays or financial instability, it can disrupt the procurement process and affect mission readiness. These risks underscore the importance of careful consideration when opting for sole-source contracts.

From a strategic standpoint, overreliance on sole-source contracting can hinder efforts to diversify the defense industrial base. A competitive and diverse industrial base is essential for fostering innovation, reducing costs, and enhancing national security. The Office of the Under Secretary of Defense (2022) has expressed concern that consolidation within the defense sector has led to increased dependence on a limited number of suppliers, which may stifle competition and innovation. This consolidation poses risks, including supply chain vulnerabilities and potential mission risks, especially if dominant suppliers face disruptions or are influenced by adversary nations. To mitigate these risks, promoting competition and expanding the supplier base are critical objectives for maintaining a resilient and effective defense industrial base.

To address these implications, NAVSEA and other defense organizations must explore strategies to balance the necessity of sole-source contracting with the benefits of competitive procurement. This may include leveraging market research to identify alternative suppliers, fostering partnerships with non-traditional defense contractors, and incentivizing innovation within the existing supplier base. Such measures can help mitigate the challenges of sole-source contracting while ensuring the Navy's operational requirements are met efficiently and effectively.

E. DEFENSE INDUSTRIAL BASE AND EVOLUTION OF PROCUREMENT POLICIES

The Defense Industrial Base (DIB) encompasses the network of public and private sector entities that provide the DoD with critical goods, services, and technologies necessary to maintain national security. This network includes prime contractors, subcontractors, and smaller suppliers, collectively responsible for supporting military readiness, innovation, and operational success. As the primary procurer of goods and services in the federal government, the DoD relies heavily on the DIB to sustain its operations, particularly in specialized fields such as shipbuilding and defense systems integration.

1. Composition and Structure of the Defense Industrial Base

The DIB is composed of a hierarchical structure of firms engaged in defense-related manufacturing, logistics, and services. According to McGinn (2020), the industrial base consists of three major categories:

- Prime Contractors and System Integrators: Large defense firms such as Lockheed Martin, Boeing, and Northrop Grumman dominate this tier. These firms are responsible for assembling and integrating major weapon systems and platforms. Shipbuilding firms have transitioned from eight to two in the last 30 years according to DoDOIG (2022), see Figure 9.

Weapons category	Total U.S. contractors			Current U.S.-based prime contractors
	1990	1998	2020	
Tactical missiles	13	3	3	▶ Boeing ▶ Raytheon Technologies ▶ Lockheed Martin
Fixed-wing aircraft	8	3	3	▶ Boeing ▶ Northrup Grumman ▶ Lockheed Martin
Expendable launch vehicles	6	2	2	▶ Boeing ▶ Lockheed Martin
Satellites	8	5	4	▶ Boeing ▶ Lockheed Martin ▶ Hughes ▶ Northrup Grumman
Surface ships	8	5	2	▶ General Dynamics ▶ Huntington Ingalls
Tactical wheeled vehicles	6	4	3	▶ AM General ▶ Oshkosh ▶ General Motors
Tracked combat vehicles	3	2	1	▶ General Dynamics
Strategic missiles	3	2	2	▶ Boeing ▶ Lockheed Martin
Torpedoes	3	2	2	▶ Lockheed Martin ▶ Raytheon Technologies
Rotary wing aircraft	4	3	3	▶ Bell Textron ▶ Lockheed Martin (Sikorsky) ▶ Boeing

Figure 9. Defense Industry Consolidation. Source: U.S. DoDOIG (2022).

- Mid-Tier Suppliers: These companies supply major subsystems, critical components, and technical services to the primes and directly to the DoD.
- Small and Niche Businesses: This group consists of firms that manufacture spare parts, develop innovative technologies, or specialize in a particular defense segment.

This tiered structure defines the industrial base's dynamics, particularly in the shipbuilding and maintenance sector, where NAVSEA operates. The DIB's ability to support the U.S. Navy's mission depends on maintaining a balance between these entities to ensure technological advancement, cost efficiency, and supply chain security.

2. The Role of the Defense Industrial Base in NAVSEA

The DIB plays a vital role in equipping the Navy with advanced capabilities, ranging from shipbuilding and maintenance to the development of sophisticated combat systems. NAVSEA, as the Navy's largest systems command, oversees approximately $348

billion annually in contracting actions, heavily relying on the DIB to sustain operational readiness (Brown, 2023). The specialized and technical nature of NAVSEA's shipbuilding and repair contracts, which involve components like nuclear propulsion and advanced weapons integration, increases the need for expertise concentrated in a few suppliers.

This reliance on a narrow supplier base creates challenges such as higher costs and reduced competition. NAVSEA's role in the DIB ensures it is not only a consumer of goods and services but also a critical influencer of market dynamics, setting standards and requirements that shape the broader defense industry. The DIB plays a central role in ensuring the DoD can meet its operational requirements, from providing state-of-the-art weapon systems to maintaining a resilient supply chain for essential components. The DIB plays a critical role in supporting national security objectives by ensuring the DoD can access the technologies, services, and capabilities necessary for mission success. According to the DoD's 2023 National Defense Industrial Strategy (NDIS), a strong, modernized industrial base is critical for fulfilling operational needs while also fostering technological advancement and reinforcing the United States' leadership in manufacturing and innovation. Although not explicitly named in the strategy release, the Office of the Under Secretary of Defense for Acquisition and Sustainment is the principal body responsible for overseeing these efforts and advancing acquisition policies that support industrial modernization and competitive capability development.

The U.S. Navy's dependency on specialized contractors, particularly in complex and capital-intensive areas like shipbuilding, reflects broader concerns about defense acquisition and industrial base consolidation. According to McGregor (2021), a handful of large defense firms dominate procurement spending, raising concerns about competition and resilience in the defense supply chain.

3. Challenges of Consolidation in the Defense Industrial Base

One of the most critical challenges impacting the Defense Industrial Base (DIB) is the long-term trend of consolidation through mergers and acquisitions. Since the post–Cold War era, the number of prime contractors has significantly declined, particularly in shipbuilding and weapons systems sectors. For example, between 1990 and 1998, the

number of prime contractors decreased in ten out of twelve major defense sectors, with reductions exceeding 60 percent in key areas such as tactical missiles, fixed-wing aircraft, and expendable launch vehicles (Gansler, 2011). This consolidation has several implications:

- Reduced Competition: Fewer contractors result in limited opportunities for open competition, particularly in highly specialized areas such as shipbuilding and depot maintenance.
- Increased Sole-Source Dependency: A smaller industrial base makes it more likely that NAVSEA must rely on sole-source suppliers for mission-critical needs, increasing procurement risks and limiting flexibility.
- Innovation Bottlenecks: When fewer firms dominate defense production, the drive to invest in new technologies may weaken, potentially slowing innovation across the sector.

These conditions create vulnerabilities in both procurement and operational readiness. For NAVSEA, depending on a limited number of contractors increases the likelihood of cost overruns, production delays, or disruptions during times of industrial strain or when contractor focus shifts away from legacy naval programs. In addition, the concentration of defense contract obligations among just five firms: Lockheed Martin, RTX Corporation, Boeing, General Dynamics, and Northrop Grumman; who collectively accounted for approximately 33 percent of Department of Defense contract obligations in fiscal year 2023 (USA Spending, 2023), illustrates the growing dominance of a few key players.

4. Strategic Importance of the Defense Industrial Base to NAVSEA

The DIB's ability to meet NAVSEA's operational needs is a key factor in the Navy's overall readiness and modernization efforts. According to USASpending.gov, NAVSEA's contracting actions accounted for approximately $38 billion in 2023, a significant portion of the Navy's budget. These contracts encompass the construction and

maintenance of advanced ships and submarines, underscoring the DIB's strategic importance in supporting national defense objectives.

However, the nature of shipbuilding and repair contracts often requires specialized knowledge and technical capabilities, which are concentrated within a few contractors. This concentration not only increases the DoD's reliance on sole-source contracts but also raises concerns about pricing fairness and the lack of competitive pressure to improve performance (FAR 6.302-1, 2025).

The DIB is a foundational element of U.S. national security, with a direct impact on NAVSEA's procurement strategies. The structure and health of the industrial base influence the availability of suppliers, competition levels, and supply chain resilience. The future of defense procurement is significantly influenced by government directives, emerging technologies, and strategic efforts like the Naval Sustainment System - Supply. Understanding the interdependencies between the DIB and NAVSEA is essential for developing effective strategies to enhance competition in a predominantly sole-source contracting environment.

5. Evolution Of Procurement Policies in the Department of Defense

The evolution of procurement policies within the DoD has been shaped by historical necessities, technological advancements, and political oversight. During World War II, the urgency of equipping the military with advanced weaponry and supplies led to a focus on efficiency and speed, often at the expense of competition. The War Powers Act of 1941 conferred exceptional authority to the federal government to bypass traditional procurement processes, enabling rapid sole-source contracting with a small group of trusted defense contractors.

After World War II, the onset of the Cold War introduced new challenges that underscored the importance of maintaining technological dominance. The government invested heavily in research and development (R&D) contracts to support the aerospace and defense industries, leading to the establishment of enduring relationships with a limited number of contractors. This period saw the rise of the "military-industrial complex," a term

popularized by President Dwight D. Eisenhower, reflecting concerns about the potential overreach and influence of defense contractors on public policy (Eisenhower, 1961).

Growing concerns over inefficiency and disjointed oversight during the 1960s and 1970s led to significant reforms in the procurement process. The Federal Procurement Regulation, issued in 1959, was one of the earliest efforts to unify federal acquisition practices across civilian agencies. However, because agencies were allowed to issue their own supplemental regulations, inconsistencies remained (Nagle, 1992). To address these shortcomings, Congress created the Office of Federal Procurement Policy (OFPP) in 1974 to improve coordination and transparency in procurement practices. These efforts culminated in the introduction of the FAR in 1984, which consolidated prior regulatory frameworks and provided unified guidance for both competitive and non-competitive contracting (Nagle, 1992; Carpenter et al., 2025).

That same year, the Competition in Contracting Act (CICA) was enacted, reinforcing the principle of full and open competition. CICA mandated that agencies provide justification for bypassing competitive processes, thereby reinforcing accountability and transparency in defense acquisitions.

The post-Cold War period brought additional challenges as the DoD grappled with budget reductions and the need to modernize aging infrastructure. Policies during this era increasingly emphasized cost-efficiency and innovation, leading to initiatives such as the Defense Acquisition Workforce Improvement Act (DAWIA) of 1990, which aimed to enhance the professionalism of the acquisition workforce (Nagle, 1992).

In recent years, procurement policies have continued to evolve in response to emerging threats and technological advancements. The 2018 National Defense Strategy underscored the importance of fostering innovation and building a resilient Defense Industrial Base. This strategic shift has prompted the DoD to explore new procurement models that promote greater flexibility and collaboration with non-traditional defense contractors (Peters, 2019).

Understanding the historical evolution of DoD procurement policies provides valuable context for addressing current challenges in NAVSEA's contracting environment.

By learning from past successes and shortcomings, policymakers can craft strategies that balance operational needs with the principles of competition and transparency.

F. THE CONTRACTING LIFE CYCLE: PRE AWARD, AWARD, POST AWARD

The contracting life cycle in government procurement is a structured process that ensures transparency, efficiency, and compliance with regulatory frameworks such as the FAR. This life cycle is particularly relevant to NAVSEA procurement environment, where sole-source contracting is a predominant challenge. A deeper understanding of each phase; Pre-Award, Award, and Post-Award, can provide insights into strategies that enhance competition in shipbuilding and repair parts procurement.

1. Pre-Award Phase

The Pre-Award phase encompasses the initial activities required to define procurement requirements, assess market capabilities, and develop a competitive solicitation process. This phase is critical for reducing sole-source reliance by identifying alternative suppliers and fostering competition.

a. Requirement Identification and Definition.

Accurately outlining the scope, specifications, and technical needs for shipbuilding and repair parts procurement helps ensure that solicitations are detailed and directly support mission goals. In NAVSEA acquisitions, requirements must consider life cycle sustainment, interoperability, and compliance with military specifications. FAR Part 11 mandates that agencies develop clear and non-restrictive specifications to encourage broader industry participation (FAR 11.002, 2025).

- Market Research. Market research plays a pivotal role in determining the availability of capable suppliers. FAR Part 10 emphasizes the need for comprehensive industry analysis to promote competition and avoid unnecessary sole-source awards (FAR 10.001, 2025). Techniques such as Requests for Information (RFIs), industry days, and supplier capability

assessments help contracting officers gauge industry interest and capacity. In the NAVSEA context, leveraging historical procurement data and engaging non-traditional defense contractors can uncover alternative sources.

- Acquisition Planning. A structured acquisition plan outlines procurement strategies, identifies risks, and aligns requirements with contracting mechanisms. FAR 7.105 requires agencies to address market conditions, competition strategies, and contract type selection. A well-developed plan mitigates the risk of sole-source dependency by considering competitive contract vehicles such as Indefinite Delivery/Indefinite Quantity (IDIQ) contracts and multiple-award contracts.
- Solicitation Preparation and Release The development of Requests for Proposals or Invitations for Bids must align with competition principles outlined in FAR Part 13 and Part 15. A transparent and well-structured solicitation process fosters broad participation and minimizes the risk of protests. For NAVSEA procurements, defining clear evaluation criteria and incorporating small business set-asides (FAR 19.502, 2025) can expand the competitive landscape.

2. Award Phase

The Award phase focuses on evaluating offers, selecting the best-value contractor, and finalizing the contractual agreement. This phase ensures that the selected supplier meets technical, financial, and regulatory requirements.

- ***Proposal.*** Evaluation criteria must be established in accordance with FAR 15.305 to ensure objectivity and fairness. The use of trade-off analyses, lowest price technically acceptable (LPTA) assessments, and past performance evaluations are critical in NAVSEA procurements. Given the complexity of shipbuilding and repair contracts, source selection procedures must balance cost-effectiveness with quality and reliability.

- ***Negotiation and Best-Value Determination.*** Negotiation strategies, governed by FAR 15.306, enable the government to refine contract terms while ensuring fairness to all offerors. In NAVSEA procurements, discussions often focus on pricing structures, delivery schedules, and performance guarantees to secure the most advantageous agreement.
- ***Contract Award and Notification.*** The formal contract award follows the evaluation and negotiation processes. FAR 15.504 mandates that the selected contractor is notified, and unsuccessful offerors receive debriefings upon request. For NAVSEA procurements, awarding contracts under full and open competition (FAR 6.101, 2025) is the preferred approach; however, when sole-source awards are necessary, proper justification and approval under FAR 6.302 must be documented.

3. Post-Award Phase

The post-award phase encompasses contract execution, performance monitoring, and closeout activities. Effective contract administration ensures compliance with terms, cost control, and the achievement of procurement objectives.

- ***Contract Administration and Compliance Monitoring.*** FAR Part 42 defines duties and functions assigned to contract administration offices, including performance monitoring, quality assurance, and risk mitigation (FAR 42.302, 2025). NAVSEA contracts require rigorous oversight due to the complexity and long life cycle of shipbuilding projects. Government Contracting Officer Representatives (CORs) play a critical role in ensuring compliance with delivery schedules and technical specifications.
- ***Contract Modifications and Adjustments.*** Contract modifications are often necessary due to changes in scope, unforeseen circumstances, or mission adjustments. FAR 43.103 categorizes modifications as either unilateral (issued by the contracting officer) or bilateral (requiring contractor agreement). In NAVSEA procurements, Engineering Change

Proposals (ECPs) are a common mechanism for modifying shipbuilding contracts while maintaining performance standards.

- ***Performance Evaluation and Lessons Learned***. Post-performance assessments are essential for continuous improvement in procurement strategies. FAR 42.1502 mandates contractor performance evaluations for contracts exceeding the simplified acquisition threshold. In NAVSEA, leveraging performance data to refine future solicitations can enhance competition by identifying areas for supplier development and process optimization.

G. COMPETITIVE CONTRACTING

One of the most critical responsibilities of a contract specialist is to ensure that the government procures goods and services from reputable vendors at fair and reasonable prices (DFARS Procedures, Guidance, and Information [PGI] 215.402, 2025). This essential duty is fulfilled through the meticulous process of conducting price analysis during comprehensive market research. By evaluating various factors such as vendor's performance past performance, pricing trends, and the quality of goods and services, contract specialists can make informed decisions that align with the FAR.

According to Kluwer (2016), engaging in this thorough market research gives room for adequate competition among supplies and allows specialists to identify and compare multiple suppliers, ensuring that the selected vendors demonstrate both reliability and value. Market research aimed at ensuring adequate price competition reveals that the presence of competition does not always equate to its effectiveness. It is entirely possible for competitive contracts to exist yet prove inadequate, or even to be deemed "adequate" without being genuinely impactful. In this context, the Government is focused on achieving both adequate and effective contract competition to fulfill its procurement needs.

For a competitive contract to be considered adequate, it must be derived from a foundation of robust competition that meets several specific criteria (See Figure 10):

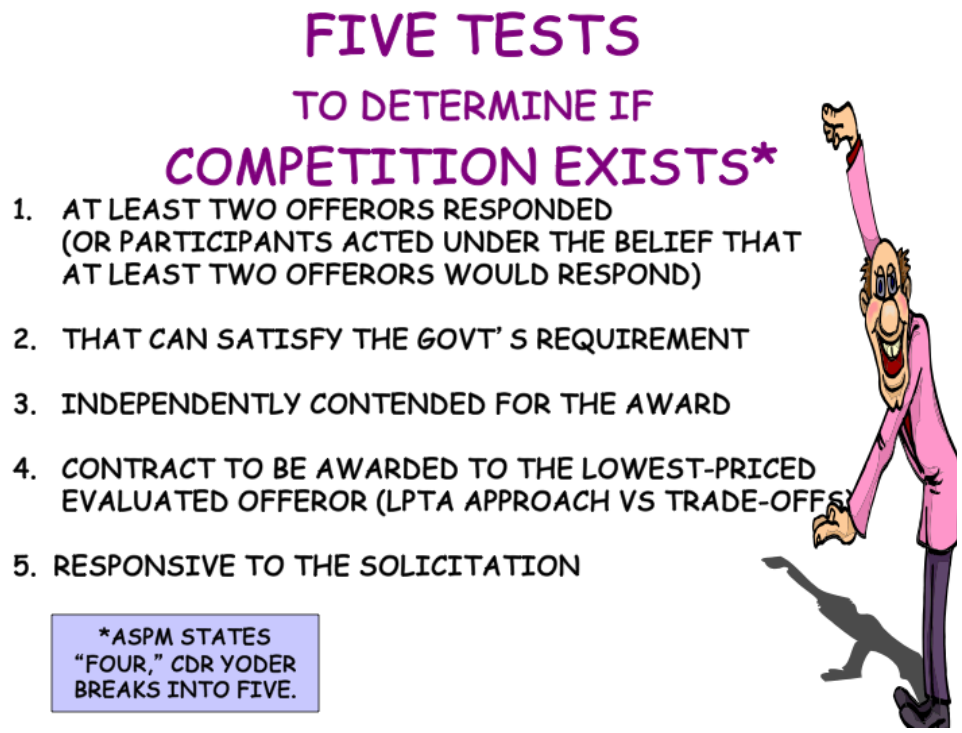

Figure 10. Five Part Test of Competition. Source: Yoder (2024).

4. Multiple Responsible Offerors: At least two or more offerors who are deemed responsible and capable have submitted proposals in response to the solicitation. To be responsible, indicates that these offerors have the necessary experience, resources, and integrity to fulfil the contract.

5. Independent Competition: The competing offerors must operate independently of one another. This independence ensures that their pricing and proposal strategies are not influenced by collusion or other unfair practices that could distort true market conditions.

6. Satisfaction with Government Requirements: The offers must include priced proposals that fully satisfy the Government's articulated requirements. In addition, both of the following stipulations must be satisfied:

- Best Value Determination: The contract award will be given to the offeror whose proposal is determined to provide the best value to the Government,

where price is being considered a significant factor in the source selection process. This involves a thorough evaluation of how well each proposal aligns with the Government's needs while considering the best pricing offered.

- Price Reasonableness Verification: There must be no determination that the price proposed by the otherwise successful offeror is unreasonable. Should there be any question regarding the reasonableness of the proposed price, such concerns must be substantiated with a clear statement of facts and subsequently approved at a level above that of the contracting officer.

1. Justifying Competition in a Contracting Environment

In addition to the requirement for competitive contracting outlined in the FAR, which emphasizes that competition promotes innovation, reduces costs, and ensures the government receives the best value for its investments (FAR Part 6), there are several noteworthy benefits that arise within the contracting environment. Leitzel (1992), in his book on Competition in Procurement, discussed numerous advantages and disadvantages associated with a competitive procurement process. These include:

a. Potential Expense Savings

When competition exists in a contracting environment, whether through dual sourcing or secondary sourcing, it creates a situation where firms are compelled to submit their best bids. This competitive bidding process drives prices down, allowing the government to obtain favorable pricing that may not be achievable in a sole-source environment where one provider monopolizes the market. The presence of multiple bidders creates a dynamic in which firms strive to offer more attractive pricing, benefiting the government's budget.

b. Encourages Innovation and Efficiency

The presence of competing firms creates a sense of urgency for contractors to improve their services and products. These firms are driven to innovate in technology and processes to maintain or capture market share. This competitive pressure results in

advancements in technology transfer, enhancements in product quality, and reductions in production costs. As firms compete for contracts, the resulting innovation not only raises the standard of goods and services provided to the government but also supports the goal of increasing overall efficiency within the procurement system.

c. Reduces Monopoly Risk

Establishing a competitive contract atmosphere mitigates the potential for monopoly pricing, which can occur when a single firm dominates a market. By promoting competition, the government effectively prevents any single entity from exerting undue influence over pricing, which can lead to inflated contract prices and decreased value for taxpayer money. This is critical in ensuring that contracts are awarded based on fair market rates.

d. Enhance Supplier Availability

Competition encourages firms to comply with performance standards and delivery timelines. When suppliers understand that their failure to meet expectations could jeopardize their chances of securing future contracts, they are more likely to demonstrate reliability and uphold high-quality standards. This commitment to performance helps ensure that the government receives consistent and dependable service delivery.

e. Encourages Better Contract Practices

The competitive landscape fosters a culture where multiple bidders must substantiate their pricing and demonstrate efficiency improvements to maintain their competitiveness. This necessity curtails excessive cost overruns, as contractors are held accountable for their bids and must align their performance with the expectations of the government.

2. Competition in Defense Contracting

Competition is a critical element of federal acquisition strategy. Within the DoD, competitive contracting is designed to promote cost efficiency, encourage innovation, and ensure equitable procurement of goods and services. Federal law and the FAR establish a

general preference for full and open competition, while also recognizing exceptions when circumstances justify limited sourcing.

Between FY 2010 and 2014, DoD's overall competition rates ranged from 56.5 to 60.8 percent (Woods, 2015). According to Woods (2015), in FY 2014 alone, DoD obligated approximately $284.4 billion in contracts and task orders, approximately 58.2 percent of which were awarded through competitive procedures. Despite this stable rate, a significant share of DoD contracts was either awarded non-competitively or received only one bid despite being solicited under competitive procedures. These "one-offer" awards represented 13 percent of all competed obligations in FY 2014 (Woods, 2015).

a. Navy Contracting and Shipbuilding Competition

While the DoD shows a moderate level of competition, the Department of the Navy stands out for its consistently lower competitive rates, due to the nature of its shipbuilding programs. In FY 2014, the Navy's competition rate was just 44.4 percent, well below the rates reported by other components such as the Army or defense agencies, which exceeded 60 and 80 percent respectively (Woods, 2015).

Shipbuilding is an area where competition is structurally limited. The industrial base capable of delivering complex naval platforms, such as nuclear submarines, aircraft carriers, and guided missile destroyers is small and highly specialized. As a result, the Navy frequently relies on sole-source awards, particularly for follow-on work to legacy platforms or ship classes where only the original manufacturer holds the technical data rights or production capacity.

In FY 2014, 83 percent of the Navy's noncompetitive contract obligations were justified under the "only one responsible source" exception to full and open competition (Woods, 2015), see Table 2. This clause, defined under FAR 6.302-1, allows agencies to limit competition when only one vendor is deemed capable of fulfilling contract requirements.

Table 2. Top Reasons for Navy Noncompetitive Contract Obligations – 2014. Adapted from Woods (2015).

Exception to Competition	Noncompetitive Obligations (Navy)
Only one responsible source	83%
Authorized or required by statute	7%
International agreement	4%
Other (e.g., urgency, national security)	6%

Some of the Navy's most critical shipbuilding programs, including the Columbia and Virginia-class submarines as well as Ford-class aircraft carriers are built under these sole-source arrangements. These platforms require unique facilities, nuclear certifications, and long-term capital investment that few contractors possess. The two dominant shipbuilders, Huntington Ingalls Industries and General Dynamics, manage all four of the Navy's largest shipyards and are often the only firms eligible for these contracts.

This concentrated market reduces the potential for true competition, even when solicitations are technically open. It also places greater emphasis on internal government cost control and oversight mechanisms to ensure fair pricing and schedule adherence. While the Navy has explored strategies such as dual-sourcing smaller ship classes, increasing subcontractor competition, and encouraging open systems architecture, these efforts are limited in scope due to the scale and complexity of major warship construction.

The reliance on noncompetitive awards in Navy shipbuilding reflects a balance between national security imperatives and procurement policy goals. While limited competition may be justified for certain platforms, it also increases the importance of proactive acquisition planning, early market research, and life cycle affordability assessments. The Navy's ability to manage its shipbuilding portfolio efficiently within a largely sole-source environment is vital to the sustainability of its fleet and the defense industrial base.

H. LEADER COMPANY CONTRACTING

The Leader-Follower Model, historically used in defense acquisition, refers to a government-directed strategy in which one contractor (the "leader") provides technical assistance to another (the "follower") to enable the latter to develop or produce the same item. This approach aims to build a second source for critical capabilities, expand production capacity, and reduce single-source dependency. While this concept remains widely cited in historical and analytical literature, it is now formally recognized in federal acquisition policy as Leader Company Contracting, as outlined in *Federal Acquisition Regulation* (FAR) Subpart 17.4. This regulation authorizes agencies to contract with a leader company to help a follower produce needed supplies or services. It also defines the conditions under which this approach is appropriate, such as when there is an urgent requirement, when competition is not feasible in the short term, or when it is in the national interest to broaden industrial base participation.

According to FAR 17.403, contracting officers may implement leader-follower arrangements in several ways. They may award a contract directly to a leader company, requiring it to assist and subcontract a portion of the work to a designated follower. Alternatively, the leader may be contracted solely for providing assistance, while a separate prime contract is awarded to the follower for production. In another variation, the follower company may be awarded the prime contract with a requirement to subcontract with the leader for technical support (FAR 17.403, 2025).

1. Historical Examples

To better understand how the Leader-Follower Model has been applied in U.S. defense procurement, it is useful to examine historical case studies that highlight its practical execution, benefits, and limitations. These examples provide insight into how government agencies have structured leader-follower relationships to build second-source capacity, reduce dependency on sole suppliers, and enhance industrial resilience. The following programs illustrate both the promise and challenges of implementing this model across different domains of defense acquisition.

a. Advanced Concept Ejection Seat ACES II Program

One of the earliest documented uses of the Leader-Follower Model in DoD procurement was the ACES II program. This initiative, led by the U.S. Air Force, sought to broaden the industrial base for critical flight safety systems by applying a structured leader-follower approach during production. Initially, ACES II seats were produced solely by McDonnell Douglas, but the government implemented a strategy to develop a second production source by assigning a follower role to Weber Aircraft, a competing firm.

Under the Leader-Follower arrangement, McDonnell Douglas provided Weber with detailed technical assistance, including access to engineering data, tooling specifications, and production guidance. The program was designed with dual objectives: preserving technical quality and safety performance while fostering a qualified alternative supplier. This was particularly important given the mission-critical nature of ejection seats in tactical aircraft such as the F-15 and F-16.

Key lessons emerged from this early application. First, the government's active role in enforcing technical transfer timelines and ensuring quality assurance at the follower facility was essential. Second, early investment in tooling and design replication allowed Weber to begin parallel production with minimal disruption. According to Soderquist (1979), the ACES II program succeeded in delivering competitively manufactured components while mitigating the risks associated with sole-source dependency. Although the government incurred initial non-recurring engineering costs, these were offset over time by improved pricing leverage, increased industrial resilience, and greater assurance of sustained readiness.

The ACES II case illustrates that with clear planning, defined roles, and sustained oversight, the Leader-Follower Model can be used effectively to develop second-source capacity in high-stakes, technically sensitive defense systems.

b. Tomahawk Missile Program

A prominent use of the leader-follower model occurred in the 1980s with the Tomahawk cruise missile program. Initially, General Dynamics was the sole producer of the missile. To mitigate supply risk, improve schedule flexibility, and expand surge

capacity, the Navy selected McDonnell Douglas as a second producer under a leader-follower arrangement. General Dynamics served as the "leader company" and provided technical data, tooling, training, and quality control guidance to McDonnell Douglas, which established a second manufacturing line in St. Louis.

The program required over $80 million in non-recurring investment to stand up the second source. These funds covered facilities upgrades, tooling transfer, requalification testing, and workforce development at McDonnell Douglas. Birker & Large (1990) reported that many of the component suppliers were already aligned with General Dynamics, requiring new sourcing strategies for McDonnell Douglas. As a result, timeline delays of 12 to 18 months were experienced during the early transfer phase, and requalification added further complexity due to slight design and process deviations.

Despite these added costs, the Navy successfully achieved its goal of dual-sourcing. By the mid-1980s, both companies were delivering Tomahawks at rates exceeding forty missiles per month combined, which was critical during Cold War force planning. Birker & Large's (1990) analysis showed that although unit cost savings from competition were modest (2% to 5%), the strategic value of having two fully operational suppliers outweighed financial concerns. In scenarios involving surge production or unexpected failure by one supplier, the Navy would still maintain continuity of operations, an outcome not easily achieved through sole-source strategies.

The Tomahawk case illustrates that the leader-follower model can meet strategic goals related to readiness and resilience, but it does so at the expense of short-term cost efficiency. The decision was not driven by economics alone, but by the Navy's broader need to secure an uninterrupted supply of long-range strike weapons at a time when Soviet threats loomed large.

c. AN/BSY-1 and AN/BSY-2 Submarine Combat Systems

Another major use of a leader-follower approach involved the AN/BSY-1 and AN/BSY-2 combat systems developed for U.S. Navy submarines in the 1980s and early 1990s. These advanced sonar and combat control systems were designed for integration into the

final variants of the Los Angeles-class attack submarines (SSN-688I) and the new Seawolf-class submarines (SSN-21), respectively.

The AN/BSY-1 program was originally planned as a single-source development effort. However, following early cost and schedule problems, the Navy implemented a split-source development strategy that mirrored the leader-follower concept. One contractor led development of key subsystems and integration, while another was brought on to perform parallel development and later production. This decision aimed to mitigate schedule delays, promote dual-source capability, and reduce reliance on a single vendor.

Despite these goals, the program encountered significant technical and coordination challenges. According to the Conahan (1990), the AN/BSY-1 system experienced a cost increase from $5.4 billion to $12.1 billion for a planned total of twenty-four systems. Average delays of 17 months occurred for the first nine submarines equipped with the AN/BSY-1 system. Delivery of incomplete capabilities in the first four systems requires post-shakedown retrofits to achieve operational readiness. Development time increased by 60 percent over original estimates.

One shipyard, Electric Boat, received nearly $82 million in contract adjustments due to combat system design changes that required late-stage hull and compartment modifications. Another shipyard requested $150 million in compensation to cover similar changes for nine submarines. Much of the added cost was related to misalignment between the leader and follower firms, who faced challenges integrating hardware and software developed independently. System complexity also required more extensive testing and training than planned, especially for sonar signal processing and fire control interfaces.

For the AN/BSY-2 system, the Navy took a more cautious approach. The contractor responsible for the AN/BSY-2 was given additional schedule margin and design authority. However, by late 1989, the program was still three months behind schedule, and critical design reviews had been postponed. These delays meant that the first Seawolf-class submarine (SSN-21) would not receive a fully functional combat system upon shipyard delivery, delaying sea trials and combat system certification.

The AN/BSY case illustrates that the leader-follower model can become strained when technical complexity, evolving requirements, and organizational silos are not fully accounted for. Although the approach aimed to accelerate system maturity and broaden vendor participation, the lack of well-defined roles, late-stage design changes, and insufficient integration planning significantly undermined program performance. Still, the Navy preserved long-term benefits: it ensured broader industrial base involvement in submarine combat system development and avoided complete dependence on a single supplier during a time of heightened strategic demand.

2. Challenges in Modern Acquisition

Today, implementing leader-follower models presents several challenges that did not exist or were less severe during earlier decades of defense procurement. Many modern systems are built around proprietary software, hardware, or integrated digital architectures that cannot be easily transferred to another firm. Prime contractors often design platforms using internally developed tools and custom interfaces, making replication by a second party difficult without extensive technical documentation, source code access, or proprietary tooling.

Intellectual property restrictions are a central barrier. Even when the government funds a significant portion of development, contractors may retain rights to key components, especially software algorithms, test procedures, or subsystem interfaces. Contractors are often reluctant to share proprietary data with potential competitors due to long-term business concerns. This is particularly common in aerospace, missile systems, and Command, Control, Communications, Combat Systems, Intelligence, Surveillance, & Reconnaissance (C5ISR) programs, where design knowledge serves as a critical competitive advantage. Securing Government Purpose Rights or Unlimited Rights under DFARS provisions can be a lengthy process, often taking months, and may still leave the follower with an incomplete technical foundation.

is a key competitive asset. Negotiating Government Purpose Rights or Unlimited Rights under DFARS clauses can take months and may still result in incomplete technical baselines for the follower.

Even when data rights are secured, knowledge transfer remains labor- and time-intensive. The "follower" company may need extensive on-site training, manufacturing process audits, and system requalification efforts. This process often requires direct collaboration between engineers, which can be delayed by organizational friction, classification restrictions, or supply chain fragmentation.

Production scale is another major constraint. Unlike Cold War-era programs that produced thousands of units over a decade, many modern defense systems, especially in the shipbuilding and space sectors, have smaller planned quantities. When annual procurement quantities are in the tens or low hundreds, the upfront cost of setting up a second production line is difficult to justify. For example, building tooling, training a new workforce, duplicating test facilities, and certifying compliance with military standards may cost tens of millions of dollars before the follower delivers a single unit.

Infrastructure and workforce readiness are additional barriers. Many second-tier defense firms do not have the same capital base or workforce experience as the primes. Even when a follower company is technically capable, it may not have cleared facilities, specialized testbeds, or vendor relationships necessary for full production onboarding. In some cases, the lead firm may be vertically integrated, limiting the pool of available firms with the ability to absorb its designs.

Finally, contracting and program management timelines make leader-follower models harder to fit into current acquisition cycles. Program Executive Offices often face pressure to deliver early operational capability within a narrow window. Establishing a leader-follower structure requires additional time for contractual arrangements, engineering support agreements, and systems engineering integration. These steps can conflict with milestone-driven acquisition timelines unless the need for second sourcing is identified early during the Materiel Solution Analysis or Technology Maturation phases.

Given these challenges, the leader-follower model is less commonly used today unless there is a strong operational driver, such as surge readiness, wartime urgency, or specific industrial base vulnerabilities that threaten long-term supply. In such cases, agencies must deliberately plan for second sourcing early in the acquisition life cycle and

align incentives, legal authorities, and funding streams to overcome institutional and technical barriers.

3. Competition Impact and Strategic Value

Despite the barriers, the leader-follower model retains significant strategic value. It remains one of the few structured approaches available for expanding defense manufacturing capacity while building resiliency into fragile supply chains. When executed effectively, it strengthens second-tier suppliers by giving them access to designs, tooling, and technical guidance that elevate their production readiness. This approach reduces the risk of supply disruption by ensuring that an alternate source is available if the lead contractor encounters delays, cost overruns, or capacity limits. Over time, it also creates viable competitive alternatives, allowing the government to shift work or renegotiate pricing based on performance. Importantly, the model supports the long-term development of skilled labor and industrial expertise in critical sectors.

The 2018 Defense Industrial Base report highlighted that fragile suppliers and single points of failure continue to threaten supply chain stability. Leader-follower contracting offers a direct way to build redundancy, especially when surge production is needed or when geographic diversity is critical to operational resilience. By deliberately expanding the number of qualified vendors, the government insulates key programs from disruptions caused by labor strikes, natural disasters, or facility damage at a single site.

In sectors like shipbuilding, long-range munitions, or integrated combat systems, where platforms may be fielded and sustained for decades, the ability to pivot between suppliers is a major asset. Programs that rely solely on one vendor often face long delays or cost escalation when that vendor underperforms. In contrast, leader-follower arrangements preserve optionality. Even when the initial investment is high, the government gains leverage and flexibility to manage vendor performance over the life of the program. This forward-looking value is difficult to capture in near-term cost analyses but proves essential in ensuring sustained force readiness.

I. BARRIERS TO COMPETITION IN NAVSEA

Naval Sea Systems Command serves as a primary acquisition entity within the DON, responsible for the procurement, sustainment, and modernization of naval vessels and associated systems. While NAVSEA's procurement framework is designed to encourage competition, significant barriers persist. These include the dominance of large prime contractors, proprietary technical data rights restrictions, long procurement cycles that favor incumbents, constraints in contract structuring, and transparency issues in award decisions.

1. Dominance of Large Prime Contractors

The U.S. Navy's shipbuilding programs, particularly those under the purview of NAVSEA, are characterized by high barriers to entry due to substantial capital investment requirements, specialized infrastructure, and long development and construction timelines. These factors have historically favored large prime contractors, leading to a heavily consolidated industrial base. In the 1980s, the United States had eight major prime contractors responsible for surface shipbuilding. Over the course of four decades, driven by mergers, acquisitions, and attrition, this number has steadily declined. By 2022, only two firms, General Dynamics and Huntington Ingalls Industries remain as the primary surface shipbuilders for the Navy (U.S. Department of Defense, 2022).

This consolidation presents significant challenges to competition. The shrinking number of primes has narrowed NAVSEA's procurement options, making it increasingly difficult to introduce competitive tension into large-scale shipbuilding programs. For instance, the Columbia-class submarine and Ford-class aircraft carrier programs operate under near-monopolistic structures, where existing primes maintain dominance due to their control over key shipyard infrastructure and proprietary technical knowledge. These factors restrict small business participation as prime contractors and introduce long-term strategic concerns, including rising costs, reduced innovation, and increased supply chain risk.

2. Proprietary Technical Data Rights Restrictions

A persistent barrier to competition in NAVSEA-managed shipbuilding and sustainment programs is the lack of government access to proprietary technical data. In many defense contracts, OEMs retain exclusive control over critical design documentation, performance specifications, and interface data. This control effectively limits the government's ability to re-compete contracts, even for routine maintenance or system upgrades.

The Office of the Under Secretary of Defense (2022) has acknowledged that such limitations on intellectual property rights can suppress competition, particularly during the sustainment phase of major acquisition programs. Without ownership or sufficient licensing of technical data, agencies frequently have no choice but to re-engage the existing contractor for future work, regardless of cost or performance concerns. This issue is especially acute in NAVSEA programs involving advanced combat systems and integrated propulsion technologies, often limited by proprietary restrictions block alternative vendors from participating. Hutton (2010) also observed that for services supporting DoD weapons programs, the lack of access to proprietary data routinely inhibits the possibility of competition. The GAO report emphasized that this dynamic, coupled with decades-long reliance on specific contractors, creates structural dependencies that prevent government agencies from engaging new suppliers. For example, the report noted that in 27 of 47 noncompetitive DoD contracts reviewed, limited access to proprietary data was the primary reason competition could not occur (Hutton, 2010).

In NAVSEA programs, this issue is particularly pronounced in complex maritime platforms that integrate sophisticated combat systems and propulsion technologies. Without adequate rights or licenses to essential technical data, the Navy is often compelled to return to incumbent OEMs regardless of performance, cost, or schedule concerns. This results in diminished market competitiveness, reduced negotiation leverage, and increased vulnerability in the supply chain.

3. Long Procurement Cycles Favoring Incumbents

NAVSEA's procurement cycles, reflective of broader defense acquisition practices, often result in long-term advantages for incumbent contractors. Large-scale shipbuilding projects, by their nature, span multiple decades, creating substantial barriers to entry for new firms. These extended timelines allow incumbents to establish entrenched positions, leveraging their familiarity with government requirements and existing infrastructure to maintain a competitive edge.

The GAO has highlighted that such prolonged contracts can discourage market entry by competitors. Courts (2013) noted that the DoD competition rate has declined for all contract obligations over a five-year period, with many noncompetitive contracts awarded under the "only one responsible source" exception. This trend indicates a reliance on incumbent contractors, often due to the complexities and durations of defense procurement processes.

Furthermore, Hutton's 2010 report emphasized that the acquisition policies of DoD did not properly technical data rights that would have benefited long term requirements. Not addressing this issue leads the government to be more reliant on manufacturers' original equipment for the sustainment of weapon systems. This reliance further solidifies incumbents' positions, as new entrants face challenges in accessing necessary technical data to compete effectively.

These factors collectively contribute to a procurement environment where incumbents are favored, and competition is limited, particularly in long-term, complex projects managed by NAVSEA.

4. Constraints in Contract Structuring

NAVSEA employs IDIQ Multiple Award Contracts (MACs), notably through the SeaPort Next Generation (SeaPort NxG) framework, to facilitate competition and maintain contractual flexibility. SeaPort NxG is designed to provide an efficient means of contracting for professional support services across various Navy activities.

However, certain structural aspects of these contracts may inadvertently limit competition:

1. Profit Margin Cap - SeaPort NxG contracts impose a cap on profit and pass-through rates at 8%, aiming to control costs (NAVSEA, 2022). While this cap is intended to ensure fiscal responsibility, it may deter participation from firms seeking higher returns, particularly in complex projects where higher profit margins might be justified
2. Limited Contracting Flexibility - SeaPort NxG restricts the use of certain contract types, such as Time-and-Materials and undefinitized orders. This limitation can constrain contractors' ability to manage financial risks in projects where costs are difficult to estimate upfront, potentially discouraging firms from bidding on such contracts.

These structural constraints, while designed to promote efficiency and cost-effectiveness, may inadvertently favor established contractors familiar with NAVSEA's contracting environment, thereby limiting opportunities for new entrants and reducing overall competition.

5. Transparency Issues in Award Decisions

Transparency is a cornerstone of effective defense procurement, directly influencing competition and fairness. While NAVSEA adheres to the Fair Opportunity to Compete principles under FAR 16, certain practices within the SeaPort NxG framework present challenges to full transparency.

Key transparency challenges include:

1. Qualitative Selection Criteria - NAVSEA's procurement processes, particularly within the SeaPort NxG framework, prioritize qualitative evaluation metrics over purely price-based competition. This approach aligns with the Department of Defense's emphasis on best value acquisitions, where factors such as technical capability, past performance, and management approach are considered alongside cost. Data from

NAVSEA's Small Business Industry Day in October 2023 reveals that out of 315 task orders awarded, 164 were not to the lowest-priced bidders, indicating that approximately 52% of awards favored proposals offering superior qualitative attributes over the lowest cost. While this evaluation strategy aims to ensure high-quality outcomes, it can inadvertently favor established contractors who are more familiar with NAVSEA's specific requirements and evaluation criteria. New entrants and smaller firms may find it challenging to compete effectively without a clear understanding of the qualitative expectations, potentially limiting competition and innovation within the defense industrial base.

2. Limited Feedback for Unsuccessful Bidders - While debriefings are formally required under FAR Part 15, in practice they often lack the depth needed for vendors, especially small businesses or new entrants, to meaningfully improve their proposals. This limitation contributes to a contracting environment where incumbent firms retain a competitive advantage based on their established understanding of NAVSEA's evaluation expectations. Scholars emphasize that more transparent and informative debriefing processes are essential for fostering long-term competition. According to Schooner (2018), well-executed debriefings serve dual purposes: they offer losing offerors insights into their deficiencies and reduce the likelihood of formal bid protests by clarifying evaluation decisions. Moreover, comprehensive feedback mechanisms are not only a fairness issue but also a strategic tool to improve proposal quality over time and broaden the field of capable competitors.

J. RISK FACTORS AND INEFFICIENCIES ASSOCIATED WITH SOLE SOURCE AWARDS

Sole-source contracting, where a contract is awarded without a competitive bidding process, is a prevalent practice in the U.S. Navy shipbuilding industry due to a limited industrial base and the complex nature of naval vessel construction (Courts, 2013). The

GAO has extensively documented the negative implications of sole-source procurement, highlighting issues related to cost overruns, supply chain vulnerabilities, quality control deficiencies, and inefficiencies in the acquisition process. This review synthesizes scholarly literature and government reports to support increased competition in shipbuilding contracts to enhance efficiency and cost-effectiveness.

1. Risk Factors in Sole-Source Shipbuilding Contracts

A closer examination of historical sole-source shipbuilding efforts reveals several recurring risk factors that undermine cost control, operational readiness, and long-term value. While sole-source contracts may be justified by urgency or technical exclusivity, they often introduce systemic vulnerabilities when used as a default approach rather than a strategic exception. The following risk categories illustrate how limited competition can lead to significant programmatic and financial consequences in the naval shipbuilding domain.

a. Cost Overruns and Budgetary Risks

A major risk in sole-source shipbuilding is the increased likelihood of cost overruns. Without competitive pressure, contractors have fewer incentives to control costs or improve production efficiency. The USS San Antonio (LPD-17), for example, suffered from severe construction flaws, leading to significant emergency repairs during its first deployment (Mackin, 2013). Similarly, the USS Freedom (LCS-1) experienced multiple propulsion and engineering failures attributed to construction and system integration issues, resulting in $78 million in unplanned repair costs during its early service (Maurer, 2022). These cases illustrate the financial consequences of relying on non-competitive procurement methods for complex naval platforms.

b. Supply Chain Vulnerabilities

Sole-source contracting can contribute to a fragile supply chain by concentrating access to critical shipbuilding components in the hands of a few vendors. GAO found that the Navy often lacked visibility into subcontractor performance and materials quality, contributing to defects and delays in delivery (Mackin, 2013). In contrast, commercial

shipbuilders used structured processes to identify and resolve deficiencies before delivery. The lack of such practices in sole-source naval shipbuilding led to extensive post-delivery repairs, sometimes exceeding tens of millions of dollars. In the case of the USS Freedom (LCS-1), system failures stemming from poor integration and supply-side issues directly impacted operational availability (Maurer, 2022).

c. Limited Innovation and Technological Stagnation

In competitive markets, firms are motivated to innovate and offer improved, cost-effective solutions. Sole-source environments, however, tend to reduce this incentive. GAO reported that commercial shipbuilders typically resolve construction defects prior to delivery, whereas Navy programs deferred these actions to post-delivery maintenance, leading to higher total life cycle expenses (Mackin, 2013). Without the pressure of competition, there is little motivation for sole-source vendors to invest in new technologies or adopt the best commercial practices.

d. Quality Control and Performance Risks

Non-competitive procurement also affects construction quality. The GAO identified more than 12,000 deficiencies in the delivery of the USS Makin Island (LHD-8), contributing to over $150 million in additional post-delivery rework and repairs (Mackin, 2013). Likewise, the USS San Antonio (LPD-17) encountered major system failures during its first operational deployment, including steering, propulsion, and electrical malfunctions. These quality issues were often tied to incomplete inspections, lack of oversight, and the absence of firm accountability standards that might otherwise be enforced in a more competitive environment.

e. Regulatory and Compliance Risks

Sole-source contracts present added oversight challenges, particularly when contractors are relied upon for internal quality control. GAO found inconsistencies in how the Navy enforced defect resolution policies, noting that shipyards were sometimes allowed to delay repairs until after delivery without proper justification or tracking (Mackin, 2013). This lack of procedural clarity not only increases cost but also opens the

door to compliance risks and weakens accountability mechanisms. In complex acquisition environments like NAVSEA's, such gaps in enforcement highlight the need for more transparent and competitive contracting practices.

2. Inefficiencies in Sole-Source Shipbuilding Contracts

Beyond the risk factors associated with sole-source contracting, persistent inefficiencies have also emerged across major naval shipbuilding programs. These inefficiencies are not limited to individual project missteps but reflect deeper structural issues tied to the lack of competitive pressure. Delays, cost escalation, and reduced accountability have become recurring patterns in non-competitive environments. The following subsections detail how these inefficiencies manifest in contract execution, supplier relationships, life cycle planning, and technology integration.

a. Delayed Deliveries and Contractual Inefficiency

Sole-source contracts in major shipbuilding programs are often assumed to improve efficiency, yet data shows these arrangements frequently encounter delays and budget overruns. For example, the Columbia-class submarine program projected to cost nearly $130 billion is facing delays of 12 to 16 months beyond its initial delivery date, jeopardizing its operational readiness timeline (Oakley, 2024). Historical GAO assessments also highlight similar trends. The USS Freedom (LCS-1) experienced propulsion failures that led to $78 million in unplanned repairs, while the LPD-22 required approximately $50 million in post-delivery corrections due to more than 3,300 outstanding deficiencies (Mackin, 2013). These cases emphasize that the absence of competition can diminish cost discipline and production quality.

b. Erosion of the Competitive Supplier Base

The consolidation of shipbuilding capacity has reduced the Navy's supplier options. As of 2022, General Dynamics and Huntington Ingalls Industries control most Navy shipbuilding programs (OUSD, 2022). This concentrated industrial base limits new market entrants and decreases incentives for price competition. In contrast, competitive programs such as the T-AKE dry cargo ships sourced from the commercial sector,

demonstrated superior delivery performance and fewer post-delivery issues (Mackin, 2013).

c. Higher Life cycle Costs

Programs that defer defect resolution until after ship delivery accrue higher long-term expenses. The GAO found that this practice increases overall life cycle costs due to recurring maintenance and unplanned retrofits. For example, USS Freedom's early failures could have been mitigated through stricter pre-delivery quality control (Maurer, 2022). These findings support the argument that competition encourages contractors to prioritize life cycle cost efficiency from the outset.

d. Reduced Bargaining Power

When a contractor becomes the sole provider of a system, the government's leverage in future negotiations is significantly weakened. This dynamic has been observed in the Columbia-class submarine program, where resistance from contractors to implement new quality management provisions persisted despite mounting deficiencies (Oakley, 2024). Competitive procurement options would give the Navy more negotiating leverage to demand performance improvements and cost concessions.

e. Risk of Technological Lock-in

Sole-source contracts often result in proprietary systems that hinder interoperability and increase upgrade costs. GAO analyses found that the lack of open architecture in earlier ship classes has impeded modernization efforts, creating long-term technical dependency on the original contractors (Mackin, 2013; Maurer, 2022). Greater use of competitive procurement and open standards can help alleviate these barriers and foster a more adaptable fleet architecture.

Sole-source contracting in shipbuilding presents a range of systemic challenges, including cost overruns, supply chain fragility, reduced innovation, and persistent delays in acquisition timelines. Findings from the GAO consistently demonstrate that non-competitive procurement contributes to quality deficiencies and diminished accountability across major naval programs (Mackin, 2013; Maurer, 2022; Oakley, 2024). These

inefficiencies underscore the urgent need for contracting reforms that incentivize competition without compromising industrial capacity. By incorporating commercial best practices and expanding the supplier base, NAVSEA can drive improvements in cost control, construction quality, and program execution. Future research should examine hybrid acquisition models that strike a balance between maintaining strategic vendor relationships and promoting a more resilient and competitive defense industrial base.

K. REGULATORY FRAMEWORKS GOVERNING SOLE SOURCE CONTRACTS

Sole-source contracting in the U.S. defense sector operates within a structured regulatory environment designed to balance operational flexibility with accountability and transparency. The primary frameworks include the FAR, DFARS, the Competition in Contracting Act (CICA) of 1984, and emerging policies like the NDIS and Better Buying Power initiatives.

1. Federal Acquisition Regulation

The FAR, established in 1984, serves as the foundational set of rules for federal procurement. FAR Subpart 6.3 outlines specific circumstances under which agencies may award contracts without full and open competition. These include situations where only one supplier can meet the requirements, cases involving unique or proprietary technologies, and urgent operational needs that preclude competitive procedures. Importantly, the FAR mandates that such justifications must not stem from a lack of advance planning or concerns related to funding availability.

2. Defense Federal Acquisition Regulation Supplement

The DFARS builds upon the FAR by introducing provisions tailored to the defense sector's unique demands. For instance, DFARS 227.7103 addresses the government's rights in technical data, emphasizing the need for detailed documentation and the use of market research to explore competitive alternatives where feasible. These requirements aim to enhance transparency while accommodating the complexities inherent in defense acquisitions.

3. Competition in Contracting Act of 1984

CICA enshrines the principle of full and open competition in federal procurement, requiring agencies to justify any deviation from competitive procedures. The act has been instrumental in curbing the excessive use of sole-source contracts and promoting accountability across federal agencies. It requires that all procurement activities be carried out in a way that ensures fair and open competition, including specific exceptions outlined for cases where competition is not feasible.

4. Better Buying Power Initiative

Launched in 2010 by the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics, the Better Buying Power (BBP) initiative aimed to improve the efficiency and effectiveness of defense acquisition. A core pillar of BBP was promoting competition to drive innovation, control costs, and improve performance. The initiative encouraged expanded reliance on competitive acquisition approaches, including affordability targets, "should-cost" analysis, and incentives tied to contractor performance. BBP also called for enhanced acquisition workforce professionalism and improved tradecraft in service contracting. While not legislative, BBP institutionalized competition-enhancing practices across the DoD through policy guidance and implementation memos. Studies evaluating BBP suggest that it contributed to improved acquisition outcomes when effectively executed, though its success often varied by program and organizational culture (Ellman, 2014).

5. National Defense Industrial Strategy

The 2023 NDIS highlights the need to broaden the defense industrial base to reduce the risks linked to dependence on a small group of suppliers. It promotes the involvement of small businesses and non-traditional vendors, aiming to broaden the supplier base and foster competition within the defense market. This strategy reflects a shift towards more flexible and inclusive procurement practices.

L. SPEND ANALYSIS

Spend analysis, according to Sievo (2025), is a comprehensive and systematic approach to understanding an organization's spending patterns. This methodology involves meticulous collection, organization, and classification of various expenses to gain insights into financial behaviors. By employing advanced analytical techniques, organizations can identify trends, detect anomalies, and uncover opportunities for cost savings or enhanced spending efficiency. Figure 11 shows the benefits of spend analysis where the process typically begins with gathering data from diverse sources, including invoices, procurement records, and expense reports. Once collected, this data is organized into a structured format that allows for more straightforward analysis.

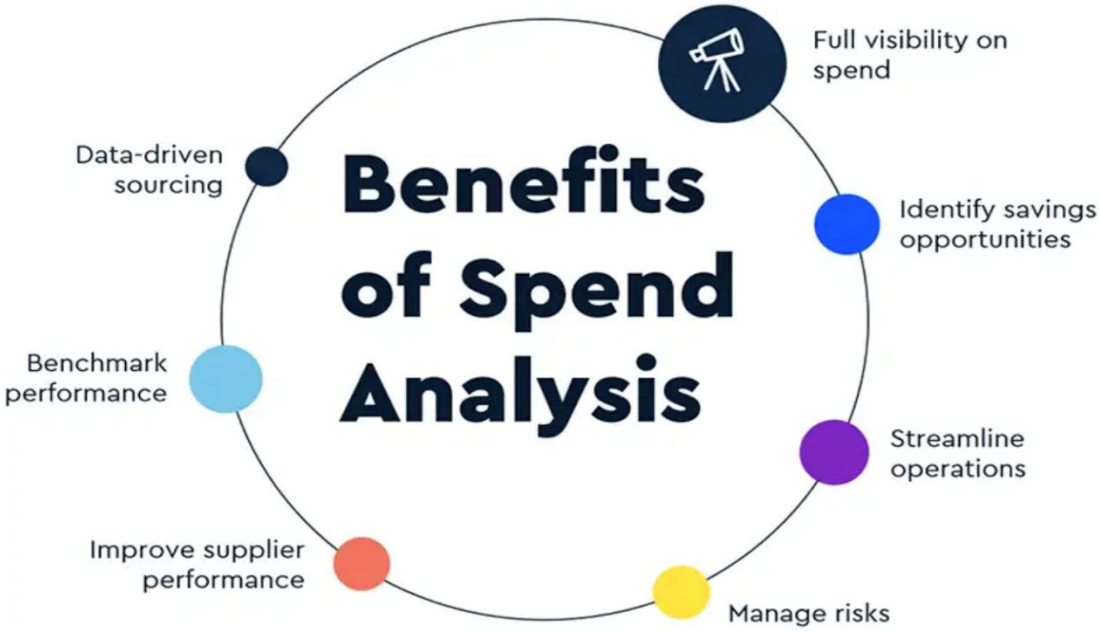

Figure 11. Benefits of Spend Analysis. Source: Sievo (2025).

Classification involves categorizing expenses into meaningful segments, such as by department, vendor, or type of expenditure. According to Pandit and Marmanis (2008),

spend analysis involves a structured examination of an organization's past purchasing data to uncover key insights. This process helps address questions such as:

- How much each cost center spent over the previous year?
- Does the total expenditure present opportunities to negotiate better terms with suppliers?
- Which commodities account for the highest spending and how those patterns are changing?
- What portion of expenditures is governed by formal contracts?
- Which suppliers hold the most strategic value to the organization?

1. Methodologies and Techniques

Effective spend analysis relies on robust methodologies and techniques. One critical aspect is data quality. The accuracy and completeness of spending data are paramount for generating reliable insights. Data cleansing and standardization are therefore essential prerequisites.

Classification and categorization of spending data are fundamental steps. Kraljic's (1981) purchasing portfolio matrix, which categorizes items based on supply risk and profit impact, remains a foundational tool for strategic sourcing. Spend analysis facilitates the application of this matrix by providing the data necessary to classify spend categories.

Advanced analytical techniques, such as statistical analysis, data mining, and visualization, are increasingly employed in spend analysis. Monczka et al. (2016) discuss the use of data mining techniques to identify hidden patterns and relationships in spending data, such as supplier consolidation opportunities and price variance analysis. Visualization tools enhance the interpretation of complex data sets, enabling stakeholders to identify key insights and trends quickly.

Linking spend analysis with related procurement functions like supplier relationship and contract management is essential to maximizing its overall value. Monczka et al. (2016) emphasizes the importance of using spend analysis to inform

supplier selection and performance evaluation, fostering collaborative relationships and driving continuous improvement.

2. Case Studies and Applications

To demonstrate how data-driven approaches can address the limitations of sole-source contracting and improve acquisition outcomes, several case studies highlight the effective use of spend analysis within the Department of Defense. These examples underscore how structured evaluations of procurement data can uncover inefficiencies, inform strategic sourcing decisions, and enhance overall contract performance. The following case studies from the U.S. Air Force and U.S. Navy illustrate the practical application of spend analysis as a means to improve procurement agility, accountability, and cost-effectiveness across defense organizations.

a. U.S. Air Force Spend Analysis

A comprehensive study conducted by the RAND Corporation employed sophisticated spend analysis techniques to aid the U.S. Air Force in pinpointing potential opportunities for enhancements in purchasing and supply chain management. The analysis meticulously scrutinized procurement data and identified specific areas where modifying current purchasing practices could yield substantial improvements in operational performance and significant cost savings. By focusing on factors such as vendor relationships, contract negotiations, and inventory management strategies, the study outlined actionable recommendations that could streamline procurement processes and optimize resource allocation, leading to a more efficient and effective supply system within the Air Force (Moore et al., 2004).

b. U.S. Navy's Procurement of Studies and Analysis

Recent research conducted at the Naval Postgraduate School delved into the Navy's procurement spending specifically focused on studies and analysis services. This comprehensive analysis revealed critical insights into the distinct contracting characteristics and the intricate relationships between various contracting offices and the specific categories of services they utilize. The findings lay a solid foundation for

developing strategic sourcing strategies aimed at optimizing procurement efficiency while aligning closely with national defense objectives. By addressing the nuances of contracting dynamics, this research contributes to improved decision-making processes and resource allocation within the Navy, ensuring that taxpayer funds are utilized effectively to bolster national security (Brill & Surarujiroj, 2020).

Spend analysis is a critical tool that empowers NAVSEA SUPSHIPs to make informed decisions, optimize budgets, negotiate better contracts, and prioritize spending in alignment with strategic goals. This proactive approach not only enhances financial management but also enhances competition and addresses the challenges associated with sole-source contracting.

M. SUMMARY

This chapter reviewed the theoretical and contextual landscape underpinning NAVSEA's reliance on sole-source contracting. Resource Dependency Theory served as the foundation, explaining how NAVSEA's dependence on a narrow supplier base creates strategic and operational vulnerabilities. The literature highlighted key drivers of this dependency such as intellectual property restrictions, industry consolidation, and inflexible procurement policies, while also identifying systemic risks like cost escalation and innovation stagnation.

In addition to theory, the chapter examined prior research on procurement life cycles, competitive contracting, and the structure of the defense industrial base. It emphasized how regulatory frameworks and market dynamics influence NAVSEA's contracting decisions and limit vendor diversity.

This literature serves not just as background but as justification for the research design and data collection methods detailed in Chapter III. By identifying knowledge gaps and analytical tools used in past studies, the review directly informs the methodological approach particularly in areas like spend analysis, vendor concentration, and contract structuring.

Together, these insights justify the need for a structured, data-driven analysis of sole-source procurement practices. The next chapter builds on this foundation by outlining the research methodology used to quantify these patterns and identify practical opportunities to increase competition within NAVSEA SUPSHIPs.

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III. METHODOLOGY

A. RESEARCH DESIGN

This research uses a mixed-methods approach that combines quantitative data analysis with qualitative insights to examine procurement practices within NAVSEA and SUPSHIP. The research draws on empirical data analysis to assess the extent, implications, and potential alternatives to sole-source contracting, with a focus on procurement efficiency, cost-effectiveness, and vendor competition.

To contextualize the data and deepen insight, a case study framework is embedded within the design. This case study centers on two NAVSEA SUPSHIP units; Groton, Connecticut, and Newport News, Virginia, selected for their strategic relevance in shipbuilding and repair operations. These cases provide a focused lens through which patterns and structural challenges in sole-source contracting can be examined.

The quantitative component involves spend analysis and statistical review of contracting data from FY20–FY24. The qualitative component incorporates a thematic synthesis of best practices and government case studies, as outlined in Section F of this chapter. Together, these methods offer a holistic and policy-relevant assessment of NAVSEA's procurement strategies.

B. DATA COLLECTION METHODS

To support a rigorous analysis of NAVSEA's sole-source contracting practices, this study employs a structured approach to data collection, drawing from authoritative federal and internal sources. The methodology focuses on acquiring both quantitative and contextual data that accurately reflects contracting patterns, vendor participation, and strategic procurement decisions. The following subsections outline the specific data sources and selection rationale used to ensure the reliability and relevance of the findings.

1. Contracting Data

The primary dataset comprises official NAVSEA SUPSHIP contracting records, obtained from authoritative procurement databases such as:

- Federal Procurement Data System (FPDS), which provides contract award details and vendor participation trends.
- NAVSEA internal reports and acquisition planning documents, offering contextual insights into procurement strategies.
- DoD procurement records, which contextualize NAVSEA's contracting practices within broader defense acquisition trends.

The data collection process was assisted by NAVSEA contracting analysts, who provided access to contracting data from FY20–FY24. Their expertise ensured the retrieval of accurate and comprehensive procurement records, facilitating a deeper understanding of NAVSEA's contracting environment.

The data collection process adheres to strict validation protocols to ensure accuracy, completeness, and reliability. Data cleaning is conducted to remove inconsistencies and standardize contract categorizations, ensuring analytical rigor.

2. Selection of Unit Identification Commands (UICs)

The selection of UICs is a crucial component of the research, ensuring that the findings are representative and policy relevant. The Groton and Newport News SUPSHIP units are chosen due to their significant role in NAVSEA's contracting framework, meeting key selection criteria:

- Contracting volume: High procurement activity, ensuring a robust dataset for analysis.
- Procurement complexity: Representation of diverse contract types, including shipbuilding, repair, and maintenance.
- Strategic significance: Alignment with NAVSEA's broader mission of fleet sustainment and modernization.

This selection process ensures that the study captures a holistic view of NAVSEA's procurement environment, facilitating policy-relevant recommendations.

C. SPEND ANALYSIS TECHNIQUES

Spend analysis serves as a critical tool in understanding NAVSEA's procurement landscape, providing a quantitative foundation for evaluating contracting efficiency. This research employs multiple analytical techniques to identify inefficiencies, cost trends, and opportunities for increasing competition.

1. Data Classification and Standardization

Spend data is systematically categorized by supplier, contract type, and service area, ensuring uniformity across contract records. The classification process follows established procurement data standards, allowing for comparative analysis across different fiscal years.

2. Trend Analysis

The study performs longitudinal trend analysis to examine four years of procurement data (FY20–FY23), identifying:

- Annual spending patterns within NAVSEA SUPSHIPs, including fluctuations in procurement costs.
- Prevalence of sole-source vs. competitive contracts, highlighting structural procurement dependencies.
- Supplier concentration levels, assessing reliance on specific vendors and associated risk factors.

3. Statistical and Visualization Techniques

This study employed Microsoft Excel, utilizing Power Query, PivotTables, and charts with conditional formatting to analyze NAVSEA SUPSHIP contracting data and generate visual insights. These tools enabled the research team to efficiently process and

interpret large datasets from FY20–FY23, revealing procurement patterns and highlighting opportunities to enhance competition.

The following analytical techniques were applied:

- Supplier Consolidation Analysis: Pivot Tables were used to quantify contract awards by vendor, revealing supplier concentration and identifying potential risks associated with over-reliance on single contractors.
- Variance Analysis: Contract pricing for similar items was evaluated using calculated fields and conditional formatting to flag significant fluctuations and cost inefficiencies.
- Benchmarking Against Best Practices: Award types and competition rates were summarized and visually compared against procurement best practice standards, with trendlines and formatted visuals highlighting areas for potential improvement.

These techniques provided empirical support for assessing NAVSEA's procurement environment and helped inform strategic recommendations to reduce reliance on sole-source contracting.

D. QUANTITATIVE ANALYSIS APPROACHES

The study utilizes quantitative methods to assess spending behavior and acquisition patterns across NAVSEA SUPSHIPs. While this study does not focus on traditional descriptive statistics (e.g., mean, median, standard deviation), it uses summary-level metrics and categorical data analysis to identify key procurement behaviors. These metrics provide a data-driven foundation for evaluating competition levels and cost efficiency in contracting practices.

1. Summary Procurement Metrics

The following metrics were used to provide a quantitative overview of NAVSEA SUPSHIPs' contracting landscape:

- Sole-Source vs. Competitive Award Rates: The percentage of sole-source contracts was calculated relative to total awards to assess the extent of non-competitive procurement.
- Cost Differentials: Differences in average contract values between sole-source and competitive awards were analyzed to evaluate financial efficiency.
- Supplier Diversity: Vendor count and distribution were analyzed to assess market competitiveness and the degree of supplier concentration.

These metrics allowed for cross-year comparison (FY20–FY23), revealing patterns in procurement practices and potential areas for increased competition.

2. Comparative and Trend Analysis

To assess deeper procurement patterns and changes over time, this study applies comparative and trend analysis techniques to NAVSEA SUPSHIP contracting data from FY20–FY23. These methods provide insights into procurement behaviors and potential areas for strategic improvement without relying on inferential statistical testing.

The following analytical approaches were used:

- Procurement Trends Over Time: Year-over-year comparisons of contract award types (sole-source vs. competitive) were conducted to identify shifts in procurement practices and policy effects.
- Cost and Vendor Diversity Patterns: Contract values and vendor participation were examined across fiscal years to highlight trends in spending efficiency and supplier diversity.
- Risk Indicators: Supplier concentration and reliance on recurring vendors were evaluated as potential risk factors for procurement vulnerability and decreased market competitiveness.

To enhance the validity of findings, a triangulation approach was used, integrating quantitative data, policy documentation, and best practice insights. This approach ensures

that the conclusions drawn are well-supported and applicable to NAVSEA's operational context.

3. Relevance to Research Questions

The quantitative analysis directly supports all three research questions:

- RQ1: Prevalence of Sole-Source Contracting – By measuring the percentage of sole-source awards and comparing them to competitive contract actions, the analysis establishes a clear baseline for NAVSEA's current competition rates.
- RQ2: Barriers to Competition – Patterns in vendor concentration, recurring awardees, and cost differentials reveal systemic issues such as incumbent dominance and limited supplier diversity that constrain competition.
- RQ3: Strategies to Enhance Competition – Insights from cost and diversity trends help identify where targeted interventions, such as increased small business participation or improved market engagement, may yield the greatest impact.

The results of this quantitative assessment are presented in Chapter IV and serve as a foundation for the integrated analysis and recommendations in Chapter V.

E. QUALITATIVE ANALYSIS APPROACHES

This study integrates qualitative methodologies to examine strategies that have successfully increased competition in federal procurement environments. The qualitative component complements the quantitative spend analysis by exploring systemic, operational, and policy-based factors that influence NAVSEA SUPSHIPs' reliance on sole-source contracting.

A total of twelve documents, including six best practices reports and six government case studies were selected based on their relevance to competitive acquisition in defense contexts. These documents were sourced from authoritative publications such

as the GAO, the Office of the Principal Director for Defense Pricing and Contracting, and peer-reviewed academic research. Structured competition-building models, such as the Leader-Follower Contracting approach under FAR 17.4, were included as part of the best practices set.

1. Source Selection and Criteria

The selected documents were screened and included based on the following criteria:

- Relevance to DoD procurement practices or shipbuilding-related acquisition issues.
- Emphasis on strategies to enhance vendor participation and reduce sole-source dependency.
- Availability of evidence-based findings, outcomes, or implementation insights.
- Applicability to NAVSEA's unique acquisition environment (e.g., technical complexity, industrial base constraints).

This source selection strategy ensured that findings were grounded in real-world, transferable experiences applicable to NAVSEA's goals. Included among the best practices were acquisition models such as the Leader-Follower Contracting framework, which formalizes second sourcing through technical mentorship and data sharing. This model, applied in past programs like the Tomahawk missile system, was reviewed as a potential strategy for mitigating incumbent dominance and expanding supplier capacity.

2. Analytical Techniques

The qualitative data was examined using a documentary content analysis method. The process included:

- Thematic coding to identify recurring patterns across best practices and case studies.

- Categorization into five focus areas: market engagement, small business participation, technical data access, contracting mechanisms, and oversight/accountability.
- Comparative synthesis to draw parallels and contrasts between theoretical recommendations and operational case study outcomes.
- Triangulation with quantitative trends and RDT to contextualize how strategies address resource dependencies and supplier imbalances.

This structured analysis enabled the identification of both barriers to competition (RQ2) and evidence-based solutions (RQ3) drawn from proven applications in federal contracting. By including leader-follower contracting among the analyzed strategies, the research evaluates how structured, government-directed pairing of incumbent and emerging suppliers can foster competition without disrupting mission-critical operations.

3. Relevance to Research Questions

Qualitative analysis serves two primary purposes:

- To uncover systemic and policy-level barriers to competition in shipbuilding and repair procurement (addressing RQ2)
- To identify practical strategies for increasing supplier diversity and fostering innovation in sole-source environments (addressing RQ3)

The findings of this qualitative analysis are detailed in Chapter IV and directly inform the recommendations and strategic framework proposed in Chapter V.

F. SUMMARY

This chapter outlined the comprehensive methodology employed to examine sole-source contracting within NAVSEA's SUPSHIP units. Utilizing a mixed-methods research design, the study integrates quantitative spend analysis and qualitative thematic evaluation to assess the extent, drivers, and potential alternatives to sole-source procurement practices. This dual approach supports a holistic examination of NAVSEA's contracting landscape while aligning with the study's three core research questions.

The research design includes an embedded case study framework, focusing on two strategically significant SUPSHIP locations in Groton, Connecticut, and Newport News, Virginia. These units were selected based on contracting volume, operational complexity, and their critical role in fleet readiness and modernization efforts. Their inclusion ensures that findings are both data-rich and directly relevant to NAVSEA's enterprise-level contracting environment.

Data collection was conducted using contracting records from FY20 through FY23, with support from NAVSEA analysts and procurement officials. Primary sources included the FPDS and NAVSEA internal reports, ensuring accurate and context-driven insights. Collected data underwent cleaning and standardization to ensure consistency across variables such as supplier name, award type, contract value, and competition status.

Spend analysis techniques were employed to quantify procurement trends and identify inefficiencies. Microsoft Excel tools such as Power Query, PivotTables, and conditional formatting were used to classify contracts, assess supplier concentration, analyze pricing variance, and visualize award distributions. These tools provided structured evidence of competition levels, cost disparities between sole-source and competitive awards, and over-reliance on key vendors. These insights are critical for answering RQ1 (prevalence of sole-source contracts) and RQ2 (barriers to competition).

The study also includes a robust qualitative component, grounded in the review of twelve documents, six government case studies and six best practices reports from GAO, DoD, and acquisition-focused institutions. Using a thematic content analysis approach, the research identified recurring strategies for improving competition, including small business engagement, technical data access, subcontracting reforms, and acquisition workforce development. These qualitative insights directly support RQ2 (barriers) and RQ3 (actionable strategies) by offering policy-relevant, evidence-based practices that complement the empirical findings.

Together, the mixed-methods approach ensures triangulated understanding of NAVSEA's procurement dynamics. By combining empirical contracting data with real-world interventions from across the federal government, this methodology equips the study

to assess current practices and propose data-informed reforms. This foundation leads directly into Chapter IV, where findings from both data streams are presented to illuminate patterns, gaps, and opportunities in NAVSEA SUPSHIP contracting practices.

This chapter detailed the research methodology, including a mixed-methods approach combining spend analysis with qualitative case study review. The inclusion of best practices such as the Leader-Follower Model provides a practical lens for evaluating strategies aimed at mitigating sole-source dependency. The next chapter presents the findings of this analysis, beginning with quantitative contract award patterns followed by qualitative themes derived from industry practices and federal case studies. These findings form the basis for the discussion and recommendations in Chapter V.

IV. FINDINGS AND ANALYSIS

A. INTRODUCTION

This chapter presents the findings of the study based on the mixed-methods approach outlined in Chapter III. The results are organized into two primary sections: quantitative data derived from NAVSEA SUPSHIP contracting records (FY20–FY24) and qualitative insights drawn from best practices and federal case studies. In keeping with the purpose of this chapter, findings are presented objectively, without interpretation or analysis. Interpretive commentary and strategic implications will be addressed in Chapter V.

The quantitative findings focus on procurement patterns at SUPSHIP Groton and Newport News, emphasizing competition levels, award distribution, supplier concentration, and the prevalence of sole-source contracting. These metrics provide an empirical foundation for understanding NAVSEA's current acquisition landscape and support Research Questions 1 and 2.

The qualitative findings capture recurring themes from reviewed case studies and policy reports, providing context and strategic insight into systemic barriers and operational best practices across the federal procurement enterprise. These findings align closely with Research Questions 2 and 3 and complement the quantitative data by identifying actionable strategies to increase competition and mitigate sole-source dependency.

Together, the results presented in this chapter serve to establish a clear and data-informed view of NAVSEA SUPSHIP's contracting environment. This evidence base will be used in the following chapter to assess causality, explore alignment with Resource Dependency Theory, and develop targeted recommendations for reforming NAVSEA's procurement approach.

B. QUANTITATIVE FINDINGS

The following quantitative findings provide an empirical foundation for assessing the extent and characteristics of sole-source contracting within NAVSEA, with a focus on SUPSHIP Groton and Newport News. By analyzing contract volume, dollar value, vendor concentration, and small business participation, the data reveals important patterns that support or challenge existing procurement practices. These metrics respond directly to the study's research questions and highlight systemic trends that inform recommendations for improving competition and industrial resilience.

1. Prevalence of Sole-Source Contracting (RQ1)

NAVSEA awarded a total of 73,107 contracts from FY20 to FY23. Of these, 52,762 contracts (approximately 72.2%) were awarded through full and open competition, while 20,345 contracts (27.8%) were awarded without competition (see Table 3, Figure 12).

Table 3. NAVSEA Summary of Contract Awards by Competition Type

Types of Contracts	**Qty**
Full and Open Competition	52,762
Not Competed	20,345
Total	**73,107**

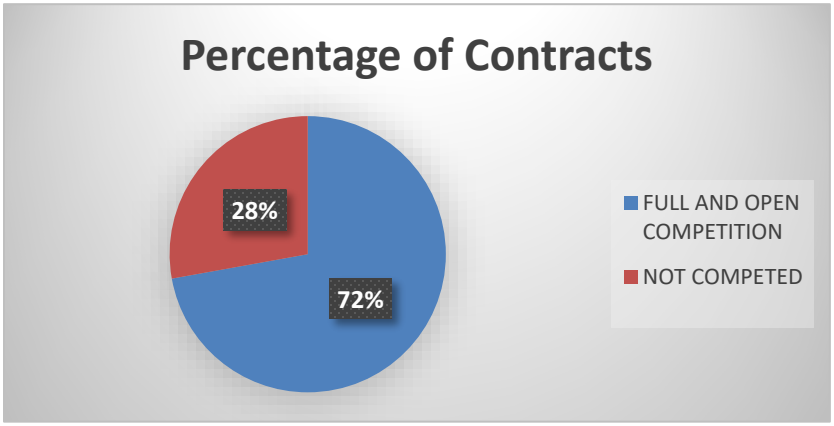

Figure 12. NAVSEA Percentage of Contract Awards by Competition Type

Despite the higher volume of competitively awarded contracts, the dollar value analysis showed a different trend. Of the total $274.1 billion awarded during this period, approximately $142.6 billion (52%) was awarded without competition, indicating that sole-source contracts accounted for a larger portion of the obligated funding (see Table 4, Figure 13).

Table 4. NAVSEA Summary of Contract Awards by Dollar Value

Types of Contracts	**Dollar Value**
Full and Open Competition	$131,465,864,993.50
Not Competed	$142,643,412,351.88
Total	**$274,109,277,345.38**

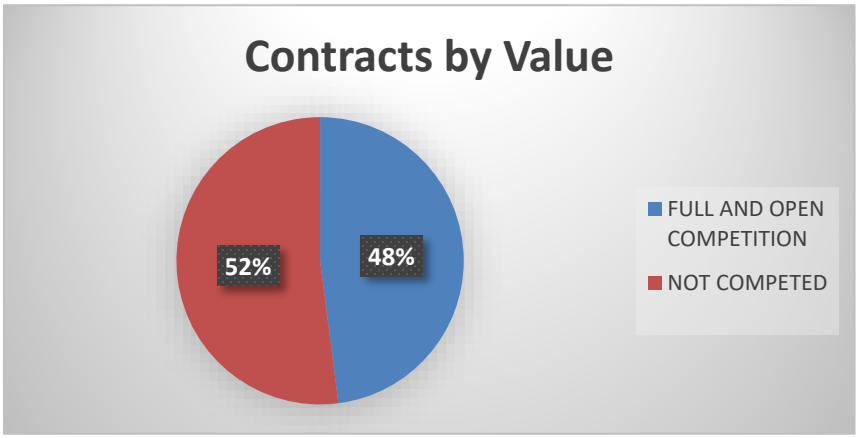

Figure 13. NAVSEA Percentage of Contract Awards by Dollar Value

2. SUPSHIP Level Sole Source Concentration (RQ1, RQ2)

At the SUPSHIP level, sole-source contracting was even more pronounced. SUPSHIP Groton awarded 99.6% of its contract dollars under not-competed conditions. Only $2.7 million out of nearly $1 billion in contract awards at Groton were competitively sourced (see Table 5, Figure 14).

Table 5. Groton, CT SUPSHIP Contract Awards by Dollar Value

Types of Contracts	**Dollar Value**
Full and Open Competition	$2,724,554.28
Not Competed	$990,744,295.74
Total	**$993,468,850.02**

Figure 14. Groton, CT SUPSHIP Percentage of Contract Awards by Competition Type

SUPSHIP Newport News exhibited a lower but still significant reliance on sole-source awards. Of the total $1.46 billion awarded, $960.9 million (66%) was awarded without competition (see Table 6, Figure 15).

Table 6. Newport News, VA SUPSHIP Contract Awards by Dollar Value

Types of Contracts	**Dollar Value**
Full and Open Competition	$494,675,076.48
Not Competed	$960,899,047.26
Total	**$1,455,574,123.74**

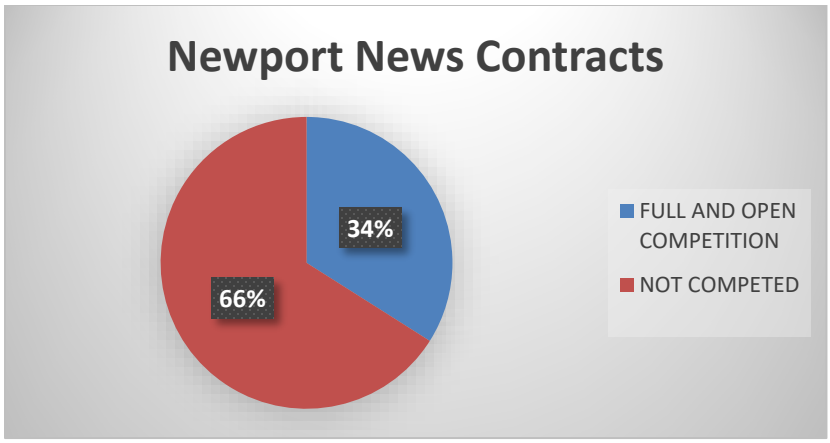

Figure 15. Newport News, VA SUPSHIP Percentage of Contract Awards by Competition Type

3. Contract Value Distribution and Complexity

Across all locations, sole-source awards were more common in high-dollar and technically complex contract categories. These included ship repair, nuclear systems integration, and engineering support services. Competitive contracts were more prevalent in lower-value, standardized acquisitions such as administrative support or logistics.

Sole-source contracts consistently displayed higher average values than competitive contracts across the data period. The value distribution further supports the observation that NAVSEA tends to rely on sole-source awards for larger and more complex procurement actions.

4. Supplier Concentration and Vendor Dominance (RQ2)

Award data revealed a concentration of contract dollars among a small group of vendors. In both SUPSHIP locations, the top five vendors in each fiscal year accounted for more than 60% of total obligations. Some contractors received repeat awards across multiple years and contract categories, particularly in technical and shipyard-related services.

This pattern was more prominent in sole-source awards, with recurring vendors appearing as sole recipients in specific functional areas such as dry dock work, propulsion components, and technical data services.

5. Small Business Participation

While small business awards were present across the dataset, they accounted for a limited share of total obligations. In most years, small businesses received less than 15% of total contract value at both SUPSHIP locations. These contracts were predominantly found in administrative or low-complexity services.

High-dollar and technically demanding contracts remained inaccessible to small businesses, with few competitive awards issued in core mission areas involving shipbuilding or repair.

6. Contract Life cycle and Duration Trends

The dataset included several multi-year sole-source awards with minimal evidence of re-competition. These contracts often included option years and cited urgency, technical restrictions, or legacy system integration as the rationale for limiting competition. Competitive contracts, in contrast, were typically structured with shorter base periods and clearer recompete intervals.

This life cycle trend points to a recurring pattern of sole-source contract renewal without full market reengagement, particularly in legacy systems support and mission-critical industrial services.

C. QUALITATIVE FINDINGS

This section presents the results of the qualitative component of this study, derived from twelve high-impact sources, including six case studies and six best practices reports from the GAO, the Office of the Principal Director for Defense Pricing and Contracting, the Naval Postgraduate School, and other federal acquisition oversight bodies. These sources were selected for their direct relevance to improving competition in defense contracting and were analyzed using a thematic content analysis framework. The findings identify recurring barriers to competition and strategic interventions that have shown effectiveness in federal acquisition contexts. The themes are organized in alignment with Research Questions 2 and 3.

1. Market Engagement and Industry Communication

Limited early engagement with potential vendors emerged as a consistent barrier to competition. Oakley (2025) has documented those agencies failing to conduct early market research, release RFIs, or host industry events often defaulted to sole-source awards due to perceived lack of alternatives. In contrast, agencies that employed proactive engagement techniques reported broader supplier interest and higher proposal quality.

Effective practices included:

- Issuing RFIs 6 to 12 months ahead of planned solicitations.
- Hosting industry days and technical interchange meetings to clarify requirements.
- Publishing long-range acquisition forecasts (per FAR 5.201) to allow adequate vendor preparation.

These efforts not only increased the number of qualified bids but also helped build long-term relationships with small and non-traditional defense contractors.

2. Technical Data and Intellectual Property (IP) Access

A central structural barrier identified across the reviewed sources was the lack of access to Technical Data Packages (TDPs) and proprietary system documentation. As described by Oakley & Maurer (2025), many sole-source justifications stem from the government's failure to obtain rights to critical technical data at contract inception.

Agencies that successfully mitigated this issue implemented the following practices:

- Mandated delivery of complete, machine-readable TDPs as a contract deliverable.
- Negotiated government purpose rights during contract formation to enable re-competition.
- Established secure digital repositories for controlled data sharing with authorized vendors.

These measures supported breakout contracting, enabled competitive sustainment, and reduced life cycle cost dependencies.

3. Small Business Participation and Capacity Building

Despite the existence of statutory set-aside programs, case studies and SBA evaluations revealed persistent underrepresentation of small businesses in complex federal acquisitions. Many small firms lacked the technical capacity or regulatory familiarity to enter large DoD markets.

Successful strategies to increase small business participation included:

- Utilizing FAR 19.502-2 set-asides in technical categories, not just administrative support.
- Implementing Mentor-Protégé Programs to foster teaming and knowledge transfer (DoD, 2025).
- Providing targeted technical and compliance support through Procurement Technical Assistance Centers (PTACs).

A case study from the Internal Revenue Service (IRS) illustrated how early integration of these strategies into acquisition planning resulted in sustained increases in small business awards across multiple fiscal years.

4. Strategic Contracting Structures

The reviewed case studies highlighted several innovative contracting mechanisms that enabled broader participation and more dynamic competition, even in historically sole-source environments.

Notable approaches included:

- Multiple-Award Contracts: These allowed for task order-level competition among a pre-vetted vendor pool, significantly reducing award timelines while maintaining competitive tension.

- Breakout Contracting: By identifying subcontracted work that could be separately solicited, agencies were able to decouple critical components from long-term sole-source arrangements.
- Fixed-Price Incentive Contracts: These were shown to shift cost and performance risk away from the government and towards the contractor, reducing reliance on sole-sourcing justified by risk aversion.
- Reverse Auctions: Used selectively in non-complex acquisitions, these platforms encouraged real-time pricing competition and reduced award costs in several pilot programs.
- Leader-Follower Contracting: Codified under FAR Subpart 17.4, this approach enables the government to pair an experienced lead contractor with a designated second source by requiring the transfer of technical data, tooling, and production expertise. Its application in federal programs such as the Tomahawk missile system demonstrated the feasibility of this model in establishing qualified alternate suppliers and expanding industrial capacity. While associated with higher upfront investment and coordination complexity, the model effectively mitigated incumbent dominance and ensured continued production of mission-critical systems.

These models were shown to lower barriers to entry, shorten award timelines, and increase the number of qualified bidders without compromising performance or oversight.

Among the evaluated practices, the Leader-Follower Model emerged as a particularly effective strategy for broadening supplier capability and mitigating incumbent dominance. Its application in past federal programs demonstrates the feasibility of pairing experienced prime contractors with emerging suppliers to improve competition without compromising mission-critical performance.

5. Oversight Mechanisms and Accountability Structures

The role of internal acquisition oversight in enforcing competition policy was emphasized across the literature. Agencies that institutionalized review and accountability

mechanisms such as competition advocates, peer review panels, and justification audits were better able to challenge entrenched sole-source practices.

Key practices included:

- Mandatory peer reviews for sole-source actions above $20 million (Mackin, 2016).
- Appointment of competition advocates to review acquisition strategies and recommend alternatives.
- Integration of competition metrics into contracting officer performance evaluations.

These structures promoted a culture of competition compliance and strategic planning, rather than reactive procurement behavior.

6. Synthesis of Case Study Themes

The reviewed documents revealed consistent thematic alignment across agency experiences:

- Proactive market engagement increases competition readiness.
- Government ownership or access to technical data is essential for re-competing sustainment contracts.
- Strategic use of contracting mechanisms broadens participation while preserving efficiency.
- Small business inclusion requires both policy and operational support.
- Internal oversight improves acquisition discipline and reduces noncompetitive awards.

These themes closely align with the quantitative findings in this study, which showed NAVSEA's high reliance on sole-source awards, limited vendor diversity, and few small business set-asides. The best practices and case studies analyzed here offer a

substantive basis for shaping targeted reforms in NAVSEA's acquisition strategy. Strategic applications of these findings are discussed in Chapter V.

D. SUMMARY

This chapter presents the results of the mixed-methods analysis described in Chapter III, providing a detailed, evidence-based view of sole-source contracting practices within NAVSEA's SUPSHIP operations. Drawing from both quantitative contract data (FY20–FY23) and qualitative case study materials, the findings were structured to directly address the study's three research questions and establish a foundation for analysis and recommendations in the following chapter.

The quantitative findings revealed a persistent and systemic reliance on sole-source contracting, particularly within high-value, technically complex procurement categories. SUPSHIP Groton and Newport News exhibited high sole-source award rates, 99.6% and 66% respectively, while a small group of incumbent contractors consistently dominated award distribution. Small business participation was found to be minimal, limited primarily to lower-value service contracts, with little evidence of breakout contracting, modular competition, or recurring market engagement.

The qualitative findings reinforced and contextualized these patterns through analysis of twelve federal reports and case studies. Agencies that achieved measurable gains in competition implemented specific strategies, including proactive market engagement, early acquisition forecasting, structured contracting vehicles such as MACs and FPIs, and robust oversight mechanisms like peer reviews and competition advocates. Across all sources, technical data access and contract modularity were identified as critical enablers of sustained competition.

Together, the findings highlight an interrelated set of structural, procedural, and policy-based challenges that contribute to NAVSEA's limited competition landscape. The triangulation of quantitative trends with qualitative best practices not only validates the study's data collection and analysis methods but also provides a multi-dimensional perspective on how sole-source dependency has developed and how it might be addressed.

These results establish a clear basis for the analytical work in Chapter V, where findings will be interpreted through the lens of RDT and existing literature. The next chapter will also explore how NAVSEA can apply proven federal practices to reduce sole-source reliance, expand its vendor base, and align contracting strategy with long-term cost efficiency, industrial resilience, and policy compliance.

The findings outlined in this chapter provide both quantitative evidence and qualitative insights into NAVSEA SUPSHIP's contracting environment. They identify patterns of sole-source dependency, systemic barriers to competition, and practical strategies implemented in comparable federal settings. These results are further examined in the next chapter, where their implications are discussed through the lens of Resource Dependency Theory, and recommendations are proposed based on observed procurement risks and reform opportunities.

V. DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS FOR FUTURE RESEARCH

A. INTRODUCTION

This final chapter interprets the findings presented in the previous chapter through the theoretical and contextual lenses developed in the literature review. It synthesizes how the data reflects patterns of sole-source dependency within NAVSEA SUPSHIP and explores the broader implications for procurement strategy, supplier diversity, and long-term operational resilience. By applying the principles of Resource Dependency Theory and insights drawn from literature on defense contracting, innovation, and industrial base consolidation, this chapter connects empirical patterns to systemic drivers.

When analyzed through the framework of Resource Dependency Theory, the results underscore NAVSEA's reliance on a limited set of suppliers and the structural constraints perpetuating that dependency. The Leader-Follower Model, previously introduced in Chapter II and examined in Chapter IV, exemplifies one method by which NAVSEA could distribute technical knowledge and expand its industrial base. These connections between theory and data support the strategic recommendations that follow.

The study relied on a mixed-methods approach grounded in document and contract data analysis from fiscal years 2020 through 2023. No interviews were conducted. As a result, the findings reflect a fact-based examination of procurement behavior, rather than perceptions or stakeholder opinion.

B. DISCUSSION OF FINDINGS

This section analyzes the findings through the frameworks and concepts outlined in the literature review. The goal is to demonstrate how the patterns revealed in the data validate, extend, or challenge the theories and empirical studies examined earlier.

1. Resource Dependency and NAVSEA's Supplier Reliance

The data reinforces a core concept of Resource Dependency Theory as introduced by Pfeffer and Salancik (1978): organizations that depend heavily on external sources for essential resources are vulnerable to power asymmetries and diminished strategic independence. NAVSEA SUPSHIP's overwhelming reliance on a narrow set of suppliers, notably General Dynamics and Huntington Ingalls Industries, underscores this dynamic. These firms consistently appear as sole-source awardees in the dataset, highlighting how technical expertise and proprietary control over critical shipbuilding systems have positioned them as irreplaceable.

This pattern mirrors examples in literature, particularly the aerospace sector, where concentrated vendor power has contributed to cost overruns, limited innovation, and schedule delays (Yildiz, 2022). In NAVSEA's case, the findings indicate that dependency is not simply a byproduct of complex requirements, it is a structural feature of the procurement ecosystem, reinforced by legacy systems and incomplete data rights.

2. Procurement Risks and the Cost of Sole-Source Practices

Findings from FY2020 to FY2023 reveal a high incidence of contract modifications and cost-type contract structures associated with sole-source vendors. These are aligned with GAO findings on the fiscal risks of non-competitive contracting, such as cost growth, performance delays, and deficient workmanship (Courts, 2013). For example, modification rates were highest on large shipbuilding contracts with limited oversight or vendor competition, reinforcing Rendon and Snider's (2019) argument that unchecked sole-source contracting invites programmatic risk.

Innovation is also constrained under current conditions. Without competing firms to challenge incumbents, there is little incentive to improve efficiency or develop advanced systems. This supports OUSD A&S (2022) observations that competition drives innovation, and its absence leads to stagnation.

3. Structural and Policy-Level Barriers

The study revealed systemic factors reinforcing sole-source dependency. Chief among them is NAVSEA's limited access to technical data packages, as noted in Gansler & Lucyshyn (2014) and internal DoD audits. Proprietary restrictions on legacy platforms prevent alternative vendors from submitting viable proposals, making intellectual property management central to fostering competition.

Underutilization of subcontractor-level competition also emerged as a barrier. Prime contracts are difficult to open to new entrants due to technical complexity, but the subcontracting tier remains an untapped channel. Yet current reporting and incentives do little to encourage primes to expand supplier networks, a gap noted in defense industrial policy reviews (Courts, 2013).

Additionally, NAVSEA's procurement behavior indicates a reactive rather than strategic culture. Many sole-source awards were justified by immediate needs or technical specificity, often without sufficient market engagement or forward planning. This aligns with DoD Inspector General findings that sole-source practices often result in late proposals, time pressure, and higher prices (DoDOIG, 2022).

4. Leader-Follower Model to Broaden Supplier Capability

NAVSEA SUPSHIP continues to rely heavily on a small group of incumbent vendors for complex parts and services. This concentration limits competition, raises long-term cost risks, and reduces flexibility. To address this, NAVSEA should consider adopting the Leader-Follower Model, a contracting approach authorized under FAR Subpart 17.4.

Under this model, a qualified lead contractor mentors a designated follower by providing access to technical data, tooling, and support. The follower then performs equivalent work under shared or parallel contracts. This structured approach enables second-source capability development while maintaining performance standards.

Evidence from the Tomahawk and ACES II programs demonstrates the model's value. In both, DoD mitigated single-source risk by pairing experienced primes with emerging suppliers. These efforts preserved readiness, surge capacity, and continuity. Key

success factors included early planning, enforceable data transfers, milestone-based oversight, and clear role definitions.

However, the AN/BSY-1 submarine combat system program illustrates risks when technical complexity is underestimated, or coordination is weak. That program experienced delays, cost overruns, and shortfalls due to unclear roles and late-stage redesigns.

For NAVSEA, the Leader-Follower Model should be applied to critical components with high sole-source risk. Implementation should follow a formal risk-benefit analysis, assessment of data availability, and readiness of participants. When applied with proper safeguards, the model offers a viable path to greater supplier diversity and resilience.

5. Subcontractor Competition and Oversight

Replacing entrenched primes is difficult, but promoting subcontractor competition is a practical alternative. NAVSEA should require primes to report subcontractor use and incentivize small and non-traditional supplier inclusion.

This increases transparency, reduces bottlenecks, and aligns with DoD goals of expanding the industrial base. The data show that primes often reuse the same lower-tier vendors, further concentrating on the supply chain. Competitive subcontracting can introduce innovation, control costs, and develop future prime candidates.

6. Secure Technical Data Rights for Strategic Leverage

The analysis confirmed that NAVSEA's inability to compete with many follow-on contracts stems from insufficient access to technical data. To counter this, future contracts should prioritize acquiring government purpose rights or data license provisions that allow broader use by alternative vendors.

Although vendors may resist sharing proprietary data, DFARS 227.7103 provides pathways to negotiate such rights. Making technical data access a standard requirement at contract initiation will strengthen NAVSEA's ability to inject competition into sustainment and upgrade work.

Together, these findings show that sole-source contracting is not just a technical or legal issue. It is embedded in organizational behavior, data practices, and acquisition norms.

C. CONCLUSION

The purpose of this research was to examine the systemic reliance on sole-source contracting within NAVSEA's SUPSHIP activities and to identify actionable strategies that could enhance competition, optimize cost-efficiency, and strengthen procurement resilience. Using Resource Dependency Theory as a framework, the study explored the relationship between NAVSEA and its constrained industrial base, emphasizing how dependencies on limited vendors and proprietary data have shaped procurement outcomes.

This research concludes that NAVSEA's persistent use of sole-source contracting is not merely the result of operational urgency or legacy practices. Rather, it reflects deeper structural dependencies that limit competitive flexibility. These include restricted access to technical data, industrial consolidation, acquisition strategies that favor bundled contracts, and limited outreach to non-incumbent vendors. Collectively, these conditions restrict NAVSEA's ability to reduce costs, expand supplier participation, and build long-term procurement resilience.

To reinforce alignment with the original research objectives, this conclusion summarizes key insights from the study and restates the research questions with corresponding summary answers.

RQ1: What percentage of NAVSEA SUPSHIP's contracts are awarded under sole-source conditions, and how does prevalence affect the competition rate within its contracting environment?

Quantitative analysis of FY2020 through FY2023 contract data revealed that sole-source contracting accounted for over 70 percent of NAVSEA SUPSHIP's total contract obligations. At SUPSHIP Groton, over 99 percent of contracts by value were awarded non-competitively. These figures confirm a pattern of entrenched sole-source practices,

particularly in ship repair and conversion, where limited vendor options and highly specialized requirements significantly restrict competition.

RQ2: What systemic, regulatory, or operational barriers limit NAVSEA SUPSHIP's ability to foster competition within its contracting environment in shipbuilding and repair parts?

Key barriers include restricted access to government-purpose technical data rights, industry consolidation that reduces the available supplier base, lengthy procurement timelines that advantage incumbents, and rigid contract structures that disincentivize new entrants. Additionally, insufficient market research and a lack of modular acquisition planning further inhibit competition.

RQ3: What actionable strategies can NAVSEA SUPSHIP implement to increase competition in a predominantly sole-source environment for shipbuilding and repair parts?

This study recommends a multi-faceted approach to address the structural barriers limiting competition within NAVSEA SUPSHIP contracting. First, piloting the Leader-Follower model can help expand supplier capability and promote competition at the subcontractor level by enabling technical collaboration between established primes and emerging vendors. Second, NAVSEA should prioritize negotiating government-purpose rights for technical data, which would allow for future re-competition and reduce long-term vendor lock-in. Third, promoting small business participation through targeted outreach and more flexible acquisition strategies can help diversify the supplier base and foster innovation. Finally, structuring requirements in a modular, outcome-based format can lower entry barriers for non-traditional contractors and create more accessible opportunities for new entrants to participate in major shipbuilding and repair efforts.

These findings provide NAVSEA with a set of evidence-based, actionable strategies that align with broader Department of Defense acquisition reform goals. By addressing the structural sources of dependency, acquisition leaders can take concrete steps toward building a more competitive, resilient, and diversified defense industrial base.

D. RECOMMENDATIONS FOR FUTURE RESEARCH

While this study provides a comprehensive view of sole-source contracting within NAVSEA SUPSHIP and identifies actionable strategies for enhancing competition, several areas remain open for further exploration. Future research can expand upon the current findings by addressing the following topics:

1. Subcontractor-Level Analysis

This study focused on prime contract awards, which limits visibility into subcontracting practices and vendor diversity at lower tiers. Future research should examine subcontractor-level data, including participation by small and non-traditional businesses, to assess how competition is, or is not, occurring beneath the prime level. Such analysis could be especially valuable in evaluating the effectiveness of subcontracting policies and small business set-asides.

2. Comparative Studies Across SYSCOMs

A comparative analysis between NAVSEA and other system commands (e.g., NAVAIR, NAVFAC, or Army Contracting Command) could help determine whether sole-source patterns and competition barriers observed in this study are unique to NAVSEA or reflective of broader trends across the DoD. This could also support cross-command benchmarking and shared best practices.

3. Program-Level Case Studies

While this study used aggregate contract data, future researchers could conduct in-depth case studies of specific NAVSEA shipbuilding or repair programs. By examining acquisition planning documents, technical data rights negotiations, and vendor engagement activities, these case studies could provide richer context around why certain contracts remain sole-source and what conditions support competition.

4. Evaluation of Leader-Follower Implementation

Building on this study's recommendation to apply the Leader-Follower model, future work could evaluate its use in other programs and services. A longitudinal

assessment of outcomes such as vendor performance, cost savings, and supply chain diversification would be especially helpful in validating the model's effectiveness in shipbuilding environments.

5. Stakeholder Perspectives

Finally, future research should incorporate qualitative interviews or surveys with key stakeholders, including contracting officers, program managers, industry representatives, and small business liaisons. Their perspectives would help clarify how policies are implemented in practice, what barriers exist at the operational level, and which strategies are most feasible within NAVSEA's contracting framework.

These areas for future study build on the foundation established by this research and can contribute to a more detailed, dynamic understanding of competition in defense contracting. They also support the continuous improvement of acquisition strategies that align with DoD goals of affordability, innovation, and industrial base resilience.

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