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Strategic Sourcing and Spend Analysis: A Case Study of the Naval Postgraduate School

9 December 2014

CPT Brett Rodgers, USAF

CPT Dwayne Lyons, USAF

CPT Thomas Maloney, USAF

Thesis Advisors: Rene G. Rendon, Associate Professor
Richard Nalwasky, Faculty

Graduate School of Business & Public Policy

Naval Postgraduate School

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About the Authors

Captain Brett Rodgers is a contracting officer in the U.S. Air Force. He was commissioned after graduating from the U.S. Air Force Academy in 2010, where he received a Bachelor of Science degree in management. After commissioning, Capt Rodgers was assigned to 628 CONS at Joint Base Charleston, SC. There he worked as the flight OIC in both services/commodities and construction flights. While in Charleston, he earned an MBA from The Citadel Graduate College, graduating in December 2012. He completed a seven-month contracting deployment to Sas al Nakhl, United Arab Emirates, in support of Seal Team 5 and Army SOF units. In July 2013, he began graduate school at the Naval Postgraduate School studying acquisition and contract management under the Graduate School of Business & Public Policy. Upon graduating, he will report to Los Angeles Air Force Base as a procurement contracting officer.

Captain Dwayne Lyons is a contracting officer in the U.S. Air Force. He was commissioned after graduating from the U.S. Air Force Academy in 2010, where he received a Bachelor of Science degree in systems engineering management. After commissioning, Capt Lyons was assigned to the Operational Contracting Division at Los Angeles Air Force Base, CA. He worked as a contract manager for services and construction. Capt Lyons then went on to work in the Launch Systems Directorate. There he worked as a contract manager on the Evolved Expendable Launch Vehicle program. While in Los Angeles, he earned an MS in entrepreneurship from Oklahoma State University, graduating in May 2013. In July 2013, he began graduate school at the Naval Postgraduate School, studying acquisition and contract management under the Graduate School of Business & Public Policy. Upon graduating, he will be assigned as a contract manager at Hanscom Air Force Base, MA.

Captain Thomas Maloney is a contracting officer in the U.S. Air Force. He was commissioned after graduating from the University of Saint Thomas in 2010, where he received a Bachelor of Science degree in business economics. After commissioning, Capt Maloney was assigned to 11 CONS at Joint Base Andrews, MD. He worked as a contracting officer for services and commodities. He completed a six-month contracting deployment to Al Udeid Air Base, Qatar, as the construction flight commander and deputy squadron commander in support of Operation Enduring Freedom. In July 2013, he began graduate school at the Naval Postgraduate School studying acquisition and contract management under the Graduate School of Business & Public Policy. Upon graduating, he will report to Los Angeles Air Force Base as a contract manager for the Space Superiority Systems Directorate.



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STRATEGIC SOURCING AND SPEND ANALYSIS: A CASE STUDY OF THE NAVAL POSTGRADUATE SCHOOL

ABSTRACT

The purpose of this study is to identify opportunities for strategic sourcing in the Naval Postgraduate School contracting office. The benefits of strategic sourcing in industry have helped realize cost savings time and time again. The necessity to acquire products and services more efficiently is a growing concern across the Department of Defense. A major step in strategic sourcing is to conduct a spend analysis, which identifies strategic sourcing opportunities. This research includes a spend analysis on the NPS contracting office, using data from FY2012 through FY2014. With the findings of the analysis, the authors identified opportunities to reduce the school's supply base and lower the number of contract actions, making the overall contracting process more efficient. The study concludes with recommendations of commodity and service categories that could be strategically sourced to realize cost savings across NPS.

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LIST OF ACRONYMS AND ABBREVIATIONS

ADP	Administrative Processing Data
AFIT	Air Force Institute of Technology
AT&L	Acquisition, Technology, and Logistics
BPA	Blanket Purchase Agreement
CAR	Contract Action Report
DAU	Defense Acquisition University
DOD	Department of Defense
DoDAAC	Department of Defense Activity Address Code
DON	Department of the Navy
DPAP	Defense Procurement and Acquisition Policy
DWSS	DOD-Wide Strategic Sourcing
ESS	Equipment/Software/Supplies
FAR	Federal Acquisition Regulation
FFP	Firm Fixed Price
FLC SD	Fleet Logistics Center San Diego
FPDS-NG	Federal Procurement Data System-Next Generation
FSC	Federal Supply Class
FSS	Federal Supply Schedule
FSSI	Federal Strategic Sourcing Initiative
FY	Fiscal Year
GAO	Government Accountability Office
GSA	General Services Administration
IDIQ	Indefinite Delivery Indefinite Quantity
IT	Information Technology
ITACS	Information Technology and Communications Services
MILCON	Military Construction
MWR	Morale, Welfare, and Recreation
NAICS	North American Industry Classification System
NPS	Naval Postgraduate School
NSAM	Naval Support Activity Monterey
NS WSS	Naval Supply Weapons System Support
OMB	Office of Management & Budget
PAM	Professional/Administrative/Management
PMO	Program Management Office
R&D	Research and Development
SAT	Simplified Acquisition Threshold
SSPMO	Strategic Sourcing Program Management Office

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I. INTRODUCTION

A. INTRODUCTION

The purpose of this chapter is to introduce our research on the Naval Postgraduate School (NPS) contracting office spend analysis. It presents background information on our report and the purpose of the research. In this chapter, we also highlight our research questions for this study, as well as the potential benefits and limitations of the study. We conclude this chapter with a summary of the organization of the remainder of the report.

B. BACKGROUND

Budget constraints in the current fiscal environment require continuous process improvement across the Department of Defense (DOD). NPS is not immune to these budgetary constraints and is seeking information to capitalize on opportunities such as strategic sourcing. The Office of Management and Budget (OMB) defined strategic sourcing as “the collaborative and structured process of critically analyzing an organization’s spending and using this information to make business decisions about acquiring commodities and services more effectively and efficiently” (OMB, 2005, para. 1). Stemming from the OMB guidance, the Defense Procurement and Policy (DPAP) developed DOD-wide strategic sourcing initiatives with the purpose of developing cost savings measures and capitalize on sourcing across federal agencies (GSA, 2014a). The Navy developed its own strategic sourcing programs to promote more standardized and efficient purchasing service-wide (Secretary of the Navy, 2011). The Navy has initiatives for a number of products and services after realizing the savings potential of strategic sourcing. NPS has the potential for similar cost savings once those products and services are identified through a spend analysis.

A spend analysis provides an agency the opportunity to review its entire spend while determining whether it received the appropriate amount of products and services given the amount paid. When an organization assesses its top supplies and services—those that consume the most dollars and actions—it is able to identify spending trends within the organization; this awareness provides opportunities for the organization to

strategically source its goods. The Government Accountability Office (2013) stated that “The government is not fully leveraging its aggregate buying power” (p. 3). To combat this, the DOD’s Better Buying Power initiatives have emphasized the elimination of unproductive, bureaucratic processes to control costs while creating incentives for industry to produce better products, thus strengthening competition within the market (Kendall, 2014). NPS has recognized potential spending inefficiencies, and a spend analysis is the most thorough tool available to break down and rebuild contracting processes.

Ultimately, strategic sourcing focuses on consolidating requirements, allowing an organization to take advantage of economies of scale. Through consolidation, an entity like NPS will have lower transaction and contract administration costs. Government agencies across the globe, including NPS, increase the value per dollar spent by utilizing a leveraged buying power and cost-savings techniques.

C. PURPOSE OF RESEARCH

The purpose of this research is to apply strategic sourcing initiatives directly to the NPS contracting office in order to promote spending efficiency and effectiveness campus-wide. Spend analysis, a strategic sourcing process that analyzes an organization’s spending, can lead to substantial cost savings. This concept focuses on leveraging economies of scale, which is vital during the current fiscally constrained budgetary environment. By taking strategic sourcing best practices from industry and the DOD, we will provide recommendations to NPS on the best course of action, in addition to steps for implementing NPS’s own sourcing initiatives, both short-term and long-term.

D. RESEARCH QUESTIONS

The purpose of this research project is to answer the following questions:

- 1. How can strategic sourcing be implemented to improve the efficiency and effectiveness of the NPS contracting office?**
- 2. How can a spend analysis identify campus-wide requirements and provide a better understanding of how to consolidate purchases?**

3. **What contract vehicles are the most optimal for major commodities and services procured campus-wide?**
4. **How can a program management approach to managing contract requirements improve the overall acquisition process?**

E. METHODOLOGY

This project identifies approaches the NPS contracting office can utilize through its understanding of strategic sourcing best practices from industry and the federal government and through the utilization of tools, such as spend analysis, to facilitate the concise management of organizational spend. These best practices and tools represent a more proactive approach to organizational spending, as opposed to a reactive approach, allowing for instant savings and providing NPS more money to spend on needed commodities and services.

Within this report, we first identify these best practices and tools in an academic and policy literature review to include academic research studies and articles, DOD policies and initiatives, GAO reports, and industry best practices. Next, we present a spend analysis report on purchases from January 2012–August 2014 that we conducted on two different types of contracts: (1) below the simplified acquisition threshold (SAT) contracts awarded by the NPS contracting office, and (2) above the SAT contracts sent from NPS to Fleet San Diego for award through data provided from the Federal Procurement Data System–Next Generation (FPDS–NG). This spend analysis examines overall spend and then focuses on top commodity and service spend based on federal supply codes (FSC). Finally, this data analysis identifies opportunities for strategic sourcing initiatives.

NPS has an opportunity to utilize industry tools and best practices to operate with a more proactive, strategic approach to contracting rather than the current reactive, traditional model. The objective of this project is to increase organizational savings by offering recommendations of commodities and services that can be strategically sourced, implementing the appropriate contracting tools that will increase worker efficiency, while overcoming organizational barriers unique to NPS. By increasing the efficiency and

effectiveness of the NPS contracting office, opportunities down the road for expanded responsibility of contracting warrant authority may be possible. After the sourcing initiative foundation is laid, consolidating all the school's purchases above the SAT under one roof will only further promote savings to the organization.

F. SIGNIFICANCE OF RESEARCH

A benefit of analyzing a DOD academic institution's contracting practices is that the analysis can show how DOD and DON strategic sourcing initiatives are trickling down to unique organizations like NPS. This paper's process of analyzing spend data and providing strategic sourcing recommendations could be used in the future for other academic institutions like the Naval Academy, Naval War College, or Air Force Institute of Technology. However, the unique mission and organizational structure of NPS may be a limitation in implementing recommendations across the DOD, DON, and other military academic institutions. Another limitation of the research is that the NPS contracting office provided only approximately three years of data, because this was the time for which it received warrant authority. The data's reliability, validity, and accuracy is also a concern because it was provided by NPS from the FPDS-NG, and this system is known to have errors when processing the DD350 Contract Action Report (CAR).

G. ORGANIZATION OF PAPER

The organization of this paper is as follows:

Chapter II presents a literature review, which reviews the key characteristics and benefits of strategic sourcing and spend analysis. The information obtained from this literature review reveals industry best practices in addition to current challenges in implementing strategic sourcing in the DOD.

In Chapter III, the NPS contracting office structure is examined. This chapter includes an organizational breakdown of the NPS contracting office, including the number of employees as well as respective job titles and responsibilities. Chapter III also identifies the types of contracts typically awarded at NPS, as well as the types of services

and/or commodities purchased by NPS. Finally, this chapter includes a discussion of NPS's contracting process for acquiring goods and services.

Chapter IV presents the results of the spend analysis conducted on NPS spend from fiscal year (FY) 2011 through FY 2014. The NPS spend analysis is based on contract data obtained from the FPDS-NG and takes into consideration various aspects of data, to include total dollar value of contract actions, number of actions and types, number of customers and contractors, and FSC codes. The analysis also provides strategic sourcing recommendations for the NPS contracting office based on the results of the spend analysis. Recommendations are provided for the acquisition of common products and services campus-wide, contract vehicles for specific commodities and services, and processes for increased oversight in contract performance via program management implementation.

Chapter V concludes with answers to the research questions and addresses barriers that NPS contracting may face in implementing the study's strategic sourcing recommendations. The chapter concludes with recommendations for areas of future research.

H. SUMMARY

This chapter introduced the research on the Naval Postgraduate School contracting office spend analysis. It presented background information as well as the purpose of the research, followed by the research questions, methodology, and significance of the research. The chapter concluded with a summary of the organization of this report. The next chapter presents a review of literature on strategic sourcing and spend analysis.

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II. LITERATURE REVIEW

A. INTRODUCTION

The purpose of this chapter is to present a literature review on strategic sourcing and spend analysis. We examine strategic sourcing as well as its application in the DOD and DON. Additionally, we discuss the benefits, opportunities, best practices, and challenges of both strategic sourcing and spend analysis.

B. STRATEGIC SOURCING

The origins of strategic sourcing go back to Japan in the 1960s. When the Japanese economy started to rebound after World War II, competition increased, and the Japanese government began to procure a greater complexity of goods and services (Dieges, Shaw, & Meyer, 2010). Companies found it necessary to reduce costs while maintaining quality products and services; therefore, they overhauled their procurement practices, specifically changing how they developed contractual relationships with suppliers (Dieges et al., 2010).

Strategic sourcing is a vital mechanism for reducing waste and promoting efficient and effective spending in procurements. Strategic sourcing allows commercial and government agencies to optimize performance, minimize price, increase achievement of socio-economic acquisition goals, evaluate total life-cycle management costs, improve vendor access to business opportunities, and otherwise increase the value of dollars spent (OMB, 2005). Strategic sourcing is a critical process that once implemented allows products and services to be procured more effectively.

At a time of intense global competition and increasing customer demands, strategic sourcing within the supply chain is even more important (Kocabasoglu & Suresh, 2006). Companies are challenged to reduce costs while also improving service or product quality. According to Kocabasoglu and Suresh (2006), strategic sourcing is the mechanism to meet these challenges. Strategic sourcing allows for major savings if supply management activities are streamlined and non-value-added tasks eliminated.

Kocabasoglu and Suresh (2006) found that strategic sourcing is more beneficial to a company when it transforms from simply the supply managers responsibility to being more aligned with an organization’s overall objectives (Kocabasoglu & Suresh, 2006).

Strategic sourcing is vital to a company’s bottom line. According to Pennino (2014), “heads of sourcing and supply chain are becoming as prevalent and as vital in the preservation and the performance of a company’s bottom line as chief technical officers” (para. 4). Strategic sourcing provides companies with spend leverage and more efficient processes; it also provides speed and transparency in supplier relationships. Companies that best optimize their spend patterns will create sustainable savings for the years ahead (Pennino, 2014).

Strategic sourcing leads to cost savings by capitalizing on economies of scale to leverage buying power. It leads to more efficient practices by consolidating requirements, aggregating and standardizing demand, and utilizing fewer contract vehicles to procure products and services agency-wide. Strategic sourcing allows for better control of purchasing processes while also reducing transaction costs. Opportunities for strategic sourcing exist when there are suppliers with multiple contracts, or when multiple divisions have contracts with the same contractors or same products, among other scenarios. Strategic sourcing lowers transaction, production, and delivery costs by leveraging buying power. Despite the realized benefits, it took a considerable amount of time for strategic sourcing principles to be implemented in the DOD.

1. Strategic Sourcing in the Department of Defense

Strategic sourcing was not introduced in the DOD until 1999 when it was augmented into the A-76 program (GAO, 2001). The General Services Administration (GSA; 2014b) defined strategic sourcing as “the structured and collaborative process of critically analyzing an organization’s spending patterns to better leverage its purchasing power, reduce costs and improve overall performance” (para. 1). Given the current fiscal environment, doing more with less is a necessity. This is evident in Executive Order No. 13589—Promoting Efficient Spend, in which the Obama administration stated that it is “committed to cutting waste in Federal Government spending and identifying

opportunities to promote efficient and effective spending” (The White House, Office of the Press Secretary, 2011, para 1).

Fiscal pressures and budgetary constraints have increased the need to implement strategic sourcing across federal agencies (GAO, 2013). The GAO has assessed strategic sourcing and its potential value for the past decade and strongly recommends its implementation in procurement strategies. Strategic sourcing represents a move away from numerous individual procurements to a broader and more comprehensive approach to acquisitions (GAO, 2013). Strategic sourcing includes a range of methods for acquiring products and services more effectively and efficiently. Methods include leveraging buying power, managing demand by changing customer behavior, achieving efficiencies through standardization of the acquisition process, evaluating total cost of ownership, and better managing supplier relationships (GAO, 2013). These methods are discussed in more detail later in this chapter in the section Best Practices in Strategic Sourcing.

DOD procurements are transforming from a transaction-focused outlook to a more strategic-focused enterprise. The purchasing function is no longer a clerical or administrative task but, rather, is viewed now as a key part in helping organizations achieve strategic objectives and gain competitive advantage (Apte, Rendon, & Salmeron, 2011). The growing number of strategic sourcing initiatives across the DOD, which is discussed next, is a testament to that fact.

In 2005, the Federal Strategic Sourcing Initiative (FSSI) was established to implement strategic sourcing solutions for the government. Its primary goals are to strategically source across federal agencies, develop cost-saving measures, foster socioeconomic participation, collaborate with industry to develop solutions, share best practices, and create a strategic sourcing environment (GSA, 2014a). The FSSI has made great strides in improving the government’s management of commonly purchased products and services. The FSSI currently has strategic sourcing solutions for the following commodities: delivery services; maintenance, repair, and operations supplies; office supplies; print management; wireless; and information services (GSA, 2014a).

The under secretary of defense for acquisition, technology, and logistics (USD [AT&L]) issued the Better Buying Power initiatives to emphasize the importance of most effectively acquiring warfighter requirements. Kendall (2014) called for eliminating unproductive processes and bureaucracy. He also enforced the importance of building stronger partnerships with the requirements community to control costs. The Better Buying Power mandates have been implemented throughout the DOD and the services.

The DOD-Wide Strategic Sourcing (DWSS) Program is an initiative to implement strategic sourcing across defense agencies. The DWSS Program was established to improve mission responsiveness by aligning the DOD's acquisition processes with functions that will obtain efficiencies in defense spending (DOD, 2013). It is a strategic acquisition management program to provide reliable, responsive, and cost-effective support to warfighters. The increased use of the DWSS program is a response to the Better Buying Power mandates to improve acquisition efficiencies through strategic sourcing initiatives to achieve cost savings and greater effectiveness (DOD, 2014).

In 2012, the Strategic Sourcing Leadership Council was established to increase government-wide sourcing of goods and services. It includes representatives from the DOD and most other federal agencies, who will be the long-term leadership of the entire government's strategic sourcing efforts (OMB, 2012). It is the council's intention that the involved agencies "promote, to the maximum extent practicable, sound strategic sourcing practices" (OMB, 2012, p. 3). The DOD initiatives have trickled down to the services, leading to the Navy developing its own strategic sourcing strategies.

2. Strategic Sourcing in the Navy

Although it implemented strategies based on the DOD initiatives long before, the Navy did not officially establish a strategic sourcing organization until 2008. That year, it started the Department of Navy Strategic Sourcing Governance Charter and Process Structure. It also designated a Strategic Sourcing Program Management Office (SSPMO) to manage the Navy's strategic sourcing program (Secretary of the Navy, 2011). The Navy's objective for strategic sourcing is "to identify opportunities for making better procurement decisions across the Navy by focusing on analysis of how the Department

generates spend, how it develops requirements, and how it sources those requirements” (Secretary of the Navy, 2011, para. 2). The initiatives were a result of the Navy realizing the potential of strategic sourcing to lead to cost savings and to reduce total spend.

The goals of the Navy’s strategic sourcing are as follows: provide visibility of strategic sourcing opportunities within the Navy, involve stakeholders early in the strategic sourcing initiatives to align requirements, mandate collaboration and use of best practices to increase savings, promote more standardized and efficient processes, align opportunities with customer needs, and achieve higher socio-economic goals (Secretary of the Navy, 2011).

Since establishing the strategic sourcing organization and goals, the Navy has taken great strides in capitalizing on opportunities. The Navy utilized the DOD EMALL as the single point of entry for office supplies Navy-wide (DOD, 2008). Users could utilize the established Navy indefinite delivery indefinite quantity (IDIQ) contracts or compare pricing from multiple sources through EMALL. The Navy estimated that it saved \$5.4 million on office supplies service-wide in FY 2008 alone (DOD, 2008). DOD EMALL eliminated the need for contracting officers to award local contracts, giving them more time to focus on other requirements (DOD, 2008).

In 2006, the Navy took the lead in developing DOD-wide clerical services contracts through the DWSS Program. Like most strategic sourcing initiatives, the goal was “to improve visibility into Department-wide clerical services spend and provide a streamlined and standardized acquisition business process, improve support of socio-economic goals, and achieve cost avoidance” (DOD, 2008, p. 92). As of 2008, the DOD-wide clerical services contracts saved \$3.15 million in its short time of use (DOD, 2008).

In 2008, the Navy established the Navy Furniture Initiative, which resulted in awarding 74 blanket purchase agreements (BPAs) with various discounts less than the Federal Supply Schedule (FSS) pricing. While the cost savings is only 1%, the Navy was able to award 31.8% of awards to small businesses. The creation of this initiative was also significant because it began to allow the Navy to capture spend information, including buying patterns, to standardize future acquisitions (DOD, 2008). As noted in

the Navy examples, strategic sourcing lends itself to considerable benefits if utilized properly.

C. BENEFITS OF STRATEGIC SOURCING

With growing budgetary constraints, agencies must assess their spending patterns and identify opportunities to utilize strategic sourcing. Strategic sourcing practices drive efficiencies and lead to savings, increased business knowledge, and better supplier management (GAO, 2013). Strategic sourcing leads to cost savings through leveraging buying power, taking advantage of economies of scale, and reducing transaction costs (Moore, Cook, Grammich, & Lindenblatt, 2004). The GAO (2012) indicated that billions of dollars can be saved annually by strategic sourcing, but agencies' lack of commitment towards it has led to subpar results.

The GAO found that some agencies saved as little as 5%, while others saved upwards of 20% by employing strategic sourcing. In 2011, the Department of Homeland Security managed 20% of its spending through strategic sourcing and achieved \$324 million in savings (GAO, 2013). The FSSI, the government-wide program established in 2005, managed \$339 million in requirements with strategic sourcing, which led to \$60 million, or 18%, in savings (GAO, 2013). Still, only 15% of government-wide procurements went through the FSSI, so there is great potential for even more savings. Although the results show the benefits of strategic sourcing, the GAO (2013) ascertained that the government does not fully employ strategic sourcing methods as it should. Across the DOD, little progress has been made to better incorporate strategic sourcing in higher-spend categories such as services (GAO, 2013). Great efficiencies can be achieved through strategic sourcing, especially with the broad scope and volume of government procurement. Strategic sourcing lends itself to greater results when it is applied to all facets of acquisitions.

Strategic sourcing drives acquisition efficiency while also meeting customer requirements and making wise use of taxpayer dollars (GSA, 2014b). Strategic sourcing increases efficiency because it provides visibility into spending habits, creates commodity expertise, enables employees to make more informed decisions, and

minimizes complexity for end-users. Strategic sourcing also improves vendor performance in that it increases the clarity of requirements, encourages innovative solutions, improves contract structures, and improves vendor ability to achieve performance goals. Strategic sourcing led agencies to achieve the President's savings target of \$40 billion, enabled the right-sizing of the acquisition workforce, minimized redundancies in the acquisition process, and increased spending transparency (GSA, 2014b). These benefits can only be realized once opportunities for strategic sourcing are identified.

D. OPPORTUNITIES FOR STRATEGIC SOURCING

Opportunities for strategic sourcing in DOD acquisitions include suppliers with multiple contracts, products or services with many suppliers, and multiple independent buying offices (Moore et al., 2004). Potential performance improvement opportunities include varied or poor quality and delivery, long wait times, little information sharing or supplier innovation, and few multiyear contracts (Moore et al., 2004). Another opportunity for strategic sourcing is when an organization has many contracts or dollars spent in the same Federal Supply Code (FSC). Federal agencies sometimes rely heavily on the North American Industry Classification System (NAICS) codes when classifying actions. However, Moore et al. (2004) offered this insight: "FSC codes offer a more finely grained indicator of a particular group of goods and services than the broader NAICS codes" (p. 31). Whether using the NAICS or FSC, the codes indicate the organization is buying the same type of products and services on separate contracts.

Another opportunity exists to exploit the use of strategic sourcing when customers are buying products or services from the same company using multiple contracts. Each contract involves transaction costs, with each additional contract reducing the ability to capitalize on economies of scale (Moore et al., 2004). High purchasing costs occur when many buyers in the same agency make similar purchases. Lower transaction costs, greater efficiencies, and substantial economies of scale can be achieved through strategic sourcing (Moore et al., 2004).

E. BEST PRACTICES IN STRATEGIC SOURCING

The best practices identified in strategic sourcing include cross-functional teams, management and customer buy-in, market intelligence, and commodity categories. The potential positive results of strategic sourcing can be achieved with leadership, shared data, and a focus on strategic categories (GAO, 2013). In regard to accessing strategic sourcing, a 2013 GAO report found that companies had to make structural changes with top leadership support and establish commodity managers to be better able to leverage their buying power to achieve savings through strategic sourcing. Companies generally agreed that the following principles were important to achieve successful acquisition outcomes: “maintaining spend visibility, centralizing procurement, developing category strategies, focusing on total cost of ownership, and regularly reviewing strategies and tactics” (GAO, 2013, p. 10).

The principles outlined in the GAO report (2013) enable companies to identify and share information on spending and increase market knowledge about suppliers to gain more insight into their procurement environments. This knowledge helps companies make more informed spending decisions. The GAO found that companies could centralize procurement decisions by aligning, prioritizing, and integrating procurement functions within the organization. Without a centralized process, different parts of the organization could unknowingly buy the same products or services. This centralization does not mean centralizing the procurement activity, but centralizing the procurement knowledge so there is an open flow of communication across the organization (GAO, 2013).

The development of sourcing strategies and supplier relationships must be done using a strategic, cross-functional approach (Moore et al., 2004). The GAO (2004) also asserted that cross-functional commodity teams should be established to access and analyze information regularly to integrate strategic sourcing. Banfield (1999) explained that cross-functional teams should be assembled to represent areas of expertise from all corporate functions. Rendon (2005) suggested that the team, consisting of functional representatives with a stake in the acquisition, should be educated in requirements

analysis, cost analysis, purchasing and supply management, and negotiations. These team members should work together to develop strategic sourcing recommendations and to select suppliers (Banfield, 1999). Including end-user customers and technical experts in the decision-making process would ensure successful customer participation and collaboration (Rendon, 2005).

Strategic sourcing requires experienced personnel with business acumen, a disciplined process, an alignment of organizational goals and resources, leadership, an awareness of organizational needs and the marketplace's capabilities, and a culture that rewards innovation. Sound market intelligence is the foundation of effective strategic sourcing; it reveals whether goals are attainable. Mere compliance with the Federal Acquisition Regulation (FAR) on a market intelligence report is not necessarily sufficient because a report can omit valuable information (Hawkins, Knipper, & Reed, 2013).

Market research is the continuous process of collecting information to maximize reliance on a commercial marketplace and to capitalize on capabilities, technologies, and competitive forces to meet an agency's need (DOD, 2011). Market research provides the expertise required to effectively conduct an acquisition. It identifies potential sources of supply, commercial product characteristics, market characteristics, commercial item standards and best practices, emerging technologies, vendor capabilities, non-development item solutions, and government leverage opportunities (Headquarters, Air Force Materiel Command, 2007). Market intelligence is the key to developing strategic sourcing to provide more value to the customer (Hawkins et al., 2013).

The GAO (2004) cited commitment, knowledge, change, and support as the major tenets of strategic sourcing. Strategic sourcing requires a firm *commitment* to meeting leaderships' objectives and knowledge in terms of better understanding spending habits. The *changes* aspect refers to the need for a structured process to transition to strategic sourcing. *Support* refers to sustained leadership, communication, and tracking metrics (GAO, 2004).

Nearly a decade later, the GAO (2013) still highlighted a lack of leadership as an impediment to strategic sourcing, finding that senior management commitment is

essential to facilitate a strategic approach. Strong analytical skills are necessary to do the front-end work for strategic sourcing (GAO, 2013). Strategic sourcing requires the sorting and analysis of spend data to identify products and services that are best suited for strategic sourcing. According to Rendon (2005), team sponsorship and level of authority are vital to strategic sourcing. Sponsors should provide goals and resources and advocate for strategic sourcing initiatives; this is key to knocking down obstacles and barriers to strategic sourcing in an organization (Rendon, 2005). The team should have the authority and power to make decisions and implement sourcing policies (Rendon, 2005).

Implementing common purchasing processes and purchasing tools is a best practice in strategic sourcing. This includes establishing a standard commodity-strategy process and utilizing spend-analysis tools to maximize strategic sourcing opportunities (Rendon, 2005). Procurement strategies should be category-specific to use the most effective sourcing strategy for each category. The degree of complexity of the product or service and its value potential determine the choice of one of the four general categories of procurement tactics (Monczka, Handfield, Giunipero, & Patterson, 2011). Banfield (1999) also noted that procurement teams should analyze expenditure data to see where the product or service falls within the quadrant to determine the relationship between the agency and suppliers. The Kraljic model, shown in Figure 1, is a portfolio analysis framework that many federal and commercial firms use to categorize products and services. The profit impact and risk of the procurement determine the agency's relationship with the supplier.

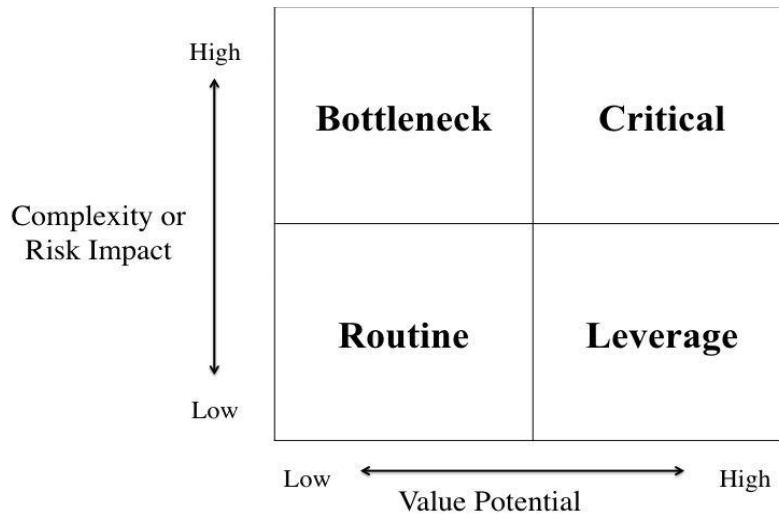


Figure 1. Portfolio Analysis Model (from Monczka et al., 2011, p. 216)

The model classifies commodities and services into four categories: critical, leverage, routine, and bottleneck. A *critical* commodity requires a high degree of business alignment and process integration (Banfield, 1999). Agencies should develop alliances with suppliers, build close working relationships with them, and jointly solve problems. *Leverage* commodities are those that are readily available but also account for a significant portion of an agency’s spending (Monczka et al., 2011). *Routine* commodities are products and services that are also readily available but are low in costs. These purchases should be streamlined and standardized. *Bottleneck* commodities and services are highly specialized; it is important to ensure supply continuity by validating supplier capabilities (Monczka et al., 2011).

Closely related to categorizing commodities is requirements management, another best practice in strategic sourcing. As Rendon (2005) observed, “Commodity strategies involve consolidating all ... requirements for a specific supply or service into one or a few standardized configuration requirements” (p. 17). The level of standardization of requirements determines an organization’s leveraging power (Rendon, 2005). This practice is not always well received; customers usually push back when their requirements are standardized. The following section includes a review of other challenges that exist when implementing strategic sourcing in federal agencies.

F. CHALLENGES TO STRATEGIC SOURCING

The following are some of the challenges in implementing strategic sourcing within the DOD: achieving public policy objectives, collecting contract data, centralizing purchasing, and standardizing requirements. Military departments have to balance prospective savings, performance improvements, risks, socioeconomic and competition goals, and other regulations not present in the private sector. This limits the DOD's ability to apply commercial best practices in strategic sourcing (Moore et al., 2004). There are some valid reasons for an organization not to explore strategic sourcing. There may be a need for diverse, unique requirements; a lack of economies of scale; separate pots of funding; independent supplier business units; and political pressures for specific suppliers (Moore et al., 2004). The GAO (2013) found that some obstacles to strategic sourcing were a result of agencies wanting to maintain control over their contracting activities and retain the flexibility to purchase unique requirements.

DOD acquisitions are governed by public law and are required to achieve public policy objectives. This is a significant challenge with regards to strategic sourcing (Rendon, 2005). The FAR (2014) states the following: "The vision of the Federal Acquisition System is to deliver on a timely basis the best-value product or service to the customer, while maintaining the public's trust and fulfilling public policy objectives" (FAR 1.102(a)). These public policies include maximizing competition and providing opportunities for small and disadvantaged businesses (Rendon, 2005). Strategic sourcing increases the scope of work performed by firms on a single contract. This can make it difficult to obtain competition and small business participation requirements. Compelling savings and performance improvement opportunities may reduce an agency's hesitation to adopt strategic sourcing (Hawkins et al., 2013). Strategic sourcing, with its goal to leverage buying power, often restricts competition and limits or excludes small business participation (Rendon, 2005). Most small businesses are not qualified to meet government strategic sourcing requirements, because they are not able to perform \$100 million or more per year in requirements. If they could, they would not be considered small businesses for future requirements (Gross, 2011).

The starting point for a spend analysis and strategic sourcing is good data; this is commonly one of the largest obstacles for an agency (GAO, 2013). Most federal agencies get their spend data from the DD350, the Individual Contract Action Report, which is reported through the FPDS–NG. It is the government’s tracking system for contracting actions, but there are some limitations with the data (GAO, 2013). The report is submitted every time a contract is awarded and is used to collect contract data statistics in the DOD (Rendon, 2005). Challenges with the reporting include poor data quality and a lack of detailed information on purchases and on intra-government transfers less than \$25,000. The lack of information on supplier performance and spend data and the need to scrub the data before analyzing are major challenges (Moore et al., 2004). There is also a risk that the data may have been input incorrectly, that the details are insufficient, or that the data is incomplete (Rendon, 2005). Errors were found with incorrect small or disadvantaged business classification for contractors. Also, the DD350 data system allows the reporting of only the dominant FSC. This can lead to incorrect estimation of dollars for a particular product or service (Moore et al., 2004). Conducting a complete spend analysis also requires information on the needs, preferences, and priorities of commodity users, which are not available in DD350 data; this lack of data often leads to data analyzers guessing what was purchased (Moore et al., 2004).

Metrics are also a challenge to implementing strategic sourcing, for example, the DOD’s inability to evaluate the return on investment on initiating strategic sourcing (Rendon, 2005). There is no clear guidance on which metrics should be used to measure the success of strategic sourcing. The GAO (2013) found that it was a challenge for agencies to produce utilization rates, spending amounts through strategic sourcing, and savings achieved that could be used to monitor progress and success. The instant savings from leveraging large-quantity buys of commodities allows an assessment of the dollars saved per procurement. Beyond that, long-term life-cycle costs like total ownership costs have not been determined. The results of standardizing configurations of supplies and services to procure high volumes have not been balanced with the training and infrastructure costs associated with strategic sourcing (Rendon, 2005). Despite its

challenges, strategic sourcing opportunities must be initiated across the DOD during this fiscally constrained environment; the first step in doing so is to conduct a spend analysis.

G. SPEND ANALYSIS

A spend analysis is the best method to identify strategic sourcing opportunities in an agency. A spend analysis is the review of an organization's purchases to get a better understanding of what the organization is buying, how much it is spending, and who are its customers and suppliers. It provides vital information and answers questions that may have otherwise gone unanswered. According to Hawkins, Nissen, & Rendon (2014), a "spend analysis is used to develop optimal sourcing strategies, and identifies opportunities to rationalize the supply base, reduce transactions, aggregate spend, leverage spend volume, standardize requirements eliminating duplicate parts and reducing inventory, and estimate potential savings" (p. 225).

Conducting a spend analysis is the first step in identifying opportunities for strategic sourcing, because it can significantly help a federal agency improve purchasing practices (Moore et al., 2004). According to DPAP, "spend analysis is part of the first critical step in making an informed business decision in the strategic sourcing process" (DOD, 2014, para 4). This is also the case in the commercial sector, as Pandit and Marmanis (2008) observed: "Spend analysis is the starting point of strategic sourcing and creates the foundation for spend visibility, compliance, and control" (p. 5). Spend analysis is the analysis of expenditures in terms of the type of commodity or service, the identity of the suppliers, the number of contracts and expenditures, and other variables that show how current money is spent (Moore et al., 2004). According to Moore et al. (2004), "A spend analysis integrates internal spend data and external supplier and market data and applies analytical and benchmarking techniques to help identify risks and opportunities for performance improvements and savings by applying best practices in purchasing and supply management" (p. 8). In order to reduce costs and improve performance, a spend analysis identifies where numerous suppliers are providing similar goods and services (GAO, 2004).

Since 2002, the GAO has emphasized the importance of a comprehensive spend analysis. A spend analysis is used in both commercial and federal organizations to provide knowledge on how money is spent. A spend analysis evaluates spend patterns in order to identify what the organization is buying, how much is being spent for what goods and services, how they are buying, who are the buyers, and who are the suppliers (GAO, 2004). Strategic sourcing utilizes a spend analysis to identify where numerous suppliers are providing similar goods and services and where costs can be reduced while improving performance through leveraged buying power, thus reducing the number of suppliers to meet agency needs (GAO, 2013). Now that spend analysis has been defined, the next section addresses the kind of information organizations gain when conducting a spend analysis.

H. BENEFITS OF CONDUCTING A SPEND ANALYSIS

A spend analysis provides great insight into an organization's leaders and customers. According to Pandit and Marmanis (2008), the commercial sector found that a spend analysis answers the following questions:

- (1) What was the corporate-wide spend associated with each cost center last year? Does the aggregate amount enable me to increase leverage with suppliers?;
- (2) What are the top commodities? What has the spend trend been over the last few years? Which of these commodities represent opportunities for spend reduction?;
- (3) Which suppliers are the most valuable and strategic?;
- (4) How much am I spending with preferred suppliers? How much am I spending with poorly performing suppliers?;
- (5) What percentage of spend is associated with contracts? (p. 5)

Similar to the commercial sector, the DOD (2014) has found that a spend analysis is vital to assess the breakdown of spend in terms of the following: the amount being spent, nature of the purchases, buying practices or types of contracts, requirements offices, buying offices, and suppliers. A spend analysis highlights procurement best practices while identifying opportunities for cost savings, leveraging economies of scale, and employing demand management principles (DOD, 2014).

A spend analysis provides invaluable information to the commercial and government sectors. Agencies get a better sense of the requirements, number of contract

vehicles, customers, dollars spent, and contractors. They are able to identify trends in spending patterns and create policies and structures to best handle these trends. Leaders can also make organizational and structure changes, and increase efficiency with spend analysis information. Leaders are able to completely transform every aspect of the organization based on the spend analysis through strategic sourcing to better serve their customers.

To fully reap the benefits of strategic sourcing, agencies must research and conduct a spend analysis. Spend analysis arranges procurement information to ascertain true category spend and identify strategic sourcing opportunities through demand aggregation and supplier rationalization (Pandit & Marmanis, 2008). Demand aggregation is the process of consolidating multiple customer requirements into a standardized form to allow for procurement through strategic sourcing. If volume can be increased under a contract by consolidating demand, lower prices can be negotiated with the supplier (Pandit & Marmanis, 2008). There are further benefits besides looking at just an organization's purchases; next, the effects of pooling resources and leveraging buying power are discussed.

The GAO (2004) found that federal agencies can achieve significant benefits from using a spend analysis to develop strategic sourcing. A spend analysis helps reduce duplication in purchasing and improves supplier performance. The GAO (2004) noted that

agencies that establish an effective spend analysis program can then achieve a total-spending perspective across the agency; make the business case for collaboration in joint purchasing rather than fragmented purchasing; create supporting structure, processes and roles to assign accountability and exercise oversight; identify potentially hundreds of millions of dollars in procurement savings opportunities by leveraging buying power; and identify opportunities to achieve other procurement process efficiencies. (p. 24)

A spend analysis unifies the purchasing power of an organization and reduces inefficient purchasing. It creates oversight and accountability measures to ensure proper contract performance. Most significantly, a spend analysis can save organizations money

by utilizing economies of scale to drive down prices. Although there are benefits to conducting a spend analysis, there may be some limitations that are uncovered after its completion.

I. LIMITATIONS OF SPEND ANALYSIS

In addition to identifying strategic sourcing opportunities, a spend analysis can also identify some limitations within a commodity. According to Moore et al. (2004), the following situations may be identified: “only one supplier or limited competition with few bidders, suppliers with financial problems, low or highly variable demand, no contract, no supplier performance incentives or commitment to improve, inadequate or poor past performance information, inappropriate scopes of work” (p. 25).

One supplier or limited competition could lead to overcharging or incorrect billing. Supplier financial problems increase the risk of poor performance or default. Variability in demand may be straining suppliers, as they need a stable amount of work to maintain equipment, personnel, and operations. No contract in place increases procurement time and transaction costs. Poor performance standards reduce incentives for suppliers to improve, and poor past performance information makes it difficult to identify the most innovative and qualified contractors (Moore et al., 2004). If an organization decides to pursue strategic sourcing initiatives, it must be prepared to fully commit to the requirements needed in order to conduct a proper spend analysis.

J. REQUIREMENTS FOR A SPEND ANALYSIS

Key processes have been identified to develop a successful spend analysis program, which involve automating, extracting, supplementing, organizing, and analyzing data (GAO, 2004). Automation denotes that the data is automatically compiled. Extracting means essential data is culled from accounts payable and other internal systems. Supplemental information includes additional data sought from internal and external sources. Organization is required to ensure data is accurate and complete. Data should be organized in logical, comprehensive categories of commodities and suppliers (GAO, 2004). Databases may have suspect information or not enough details on the

products and services being procured. Data should be accurate, complete, and consistent, and undergo extensive review to validate. Data analysis is used to cut costs, streamline acquisitions, and optimize the supply base. This includes using analytical tools to continually analyze data to support strategic sourcing decisions (GAO, 2004).

Implementing a spend analysis program requires capable personnel and organizational changes. Pandit and Marmanis (2008) suggested the following guidelines to successfully implement a spend analysis program:

(1) Set objectives, (2) Lead from the top, (3) Establish a focused center of excellence, (4) Carefully evaluate choices, (5) Take a limited-scope, phased-rollout approach, (6) Know your data, (7) Ensure that technology supports business, (8) Align the team to support the organization, (9) Increase organizational visibility to spend and sell internally, (10) Measure constantly and report frequently, and (11) Engage with your application provider. (p. 5)

It is important for management to create an environment conducive to maintaining a spend analysis program by setting clear and achievable objectives. Management must develop a transition plan to initiate the change in the organization and should then ensure that the necessary technology systems and organizational structures are in place to support the program. Finally, for the program to remain effective, the organization must remain transparent, must constantly track spending patterns, and then must adjust its future outlays (Pandit & Marmanis, 2008).

The academic literature provides a solid foundation on strategic sourcing and the key principles associated with it. Strategic sourcing has several definitions, but ultimately it means taking a strategic approach to purchasing in a way that leverages buying power to maximize economies of scale. This reduces costs and improves efficiency. The Department of Homeland Security and FSSI achieved tremendous savings through strategic sourcing. There is potential for even more savings because strategic sourcing is not fully utilized across the DOD. Customers buying products from the same company on multiple contracts represent some of the many opportunities to utilize strategic sourcing to reduce costs. Unstable quality levels and lack of innovation are great opportunities to use strategic sourcing to improve efficiency.

To fully reap the benefits of strategic sourcing, research shows that agencies must conduct a spend analysis. A spend analysis gives insight into the amount spent by an organization, identifies the customers and suppliers, and determines the procurement method for products and services. A thorough spend analysis can provide many benefits, such as identifying duplicated efforts as well as commodities with unfavorable markets. A spend analysis program requires management to create an environment of transparency in the organization to allow for a successful program.

After years of use, the commercial sector and the DOD have identified some best practices in strategic sourcing. Cross-functional teams have proven successful in having personnel from various business functions involved early in the acquisition process. Market research is also very important; it provides the foundation for strategic sourcing possibilities. Research shows that it is important for leadership to buy in and to empower the strategic sourcing team through sponsorship and authority. Categorizing commodities in line with the Kraljic model has been found to be successful in managing supplier relationships (Monczka et al., 2011).

Implementing strategic sourcing is not without some challenges, especially in the DOD. As we know, maintaining small business policies and regulations is part of the vision of the Federal Acquisition System. Strategic sourcing, on the other hand, limits competition and participation by small and disadvantaged businesses due to the scale of the requirements. Complications also exist with the contract reporting data in the FPDS–NG: Information is often omitted or mislabeled, which translates into errors in conducting the spend analysis. It is a challenge to quantify the savings and return on investment in implementing strategic sourcing practices in an organization.

Overall, the literature shows that, if implemented properly, strategic sourcing can be vitally important to an organization. Conducting a spend analysis is the first step in identifying strategic sourcing opportunities. In this chapter we introduced the methods, benefits, best practices, and challenges introduce background information that assisted us in our research to identify strategic sourcing possibilities for the NPS contracting office.

K. SUMMARY

In this chapter, we presented a literature review in which the purpose and outcomes of a spend analysis were explained. We provided a foundation of strategic sourcing best practices and challenges and their application to DOD acquisitions. The following chapter describes the NPS contracting office—its organization and the mission, history, and current operations. Chapter III provides a foundation for our research into the NPS contracting office, which this study is based upon.

III. NPS CONTRACTING OFFICE

A. INTRODUCTION

Since the data used in the spend analysis is from the NPS contracting office, it is important to establish a fundamental understanding of the organization's structure, functions, and capabilities. This chapter provides an in-depth description of the institution and its organization, history, and current operations and contracting activities.

B. INSTITUTION OPERATIONS

The mission of NPS (2014) is to

provide relevant and unique advanced education and research programs to increase the combat effectiveness of commissioned officers of the naval service to enhance the security of the United States. In support of the foregoing, and to sustain academic excellence, foster and encourage a program of relevant and meritorious research which both supports the needs of the Navy and Department of Defense while building the intellectual capital of the Naval Postgraduate School faculty.

The FY 2013 operating budget for NPS was approximately \$294,500,000. Figure 2 details the changes in the operating budget from 2009 to 2013. There have been significant fluctuations in budgets, which is consistent with the ever-changing fiscal environment within the DOD and the need to identify cost savings.

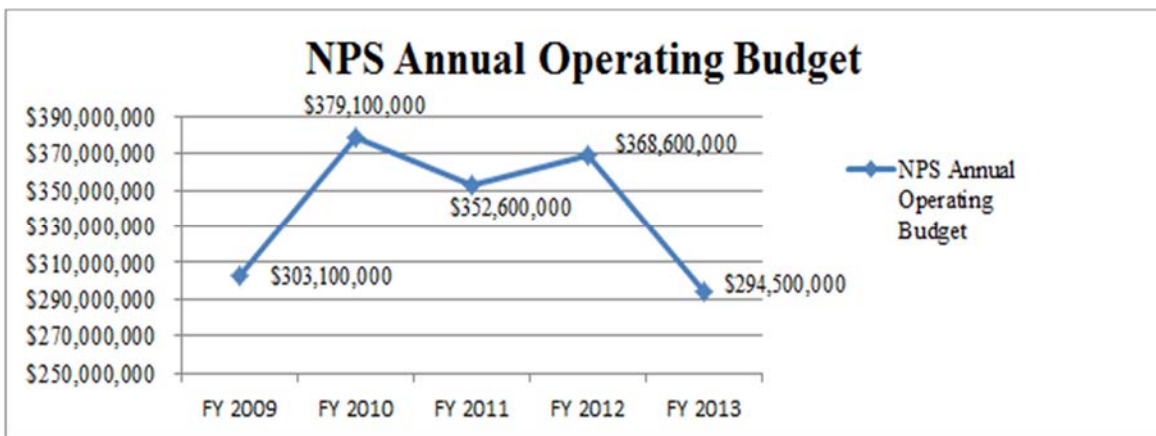


Figure 2. Historical NPS Operating Budget (from NPS Annual Report, 2014)

C. ORGANIZATION

The NPS contracting office is one of three purchasing entities located on Naval Support Activity Monterey (NSAM). The other two on the installation are NPS NSAM, which is an activity of the Commander Naval Region Southwest; and Morale, Welfare, and Recreation (MWR), which is an activity of the Navy Exchange Command (Lee, 2013). Despite being located on the same installation, the offices perform different functions and fall under different commands. NSAM facilitates the Military Construction (MILCON) projects for the base, while the NPS contracting office executes the educational and research mission requirements (Lee, 2013). The NPS contracting office falls under the senior management functional support area, specifically the Directorate of Contracting and Logistics Management which reports directly to the NPS President.

D. HISTORY

Prior to the establishment of the NPS contracting office, Fleet Logistics Center San Diego (FLC SD) and Naval Supply Weapons System Support (NS WSS) awarded all requirements for service support above the micro purchase threshold for NPS (Lee, 2013). FLC SD also administered a single IDIQ time and materials contract for all research, educational, and administrative mission essential support services requirements, which expired in 2011 (Lee, 2013). NPS had warrant authority to procure firm fixed priced (FFP) products and services from GSA and NASA up to \$150,000 to be paid with the Government wide Purchase Card. FLC SD handled all GSA and NASA purchases over \$150,000 (Lee, 2013). In December 2011, NPS was granted warrant authority by FLC SD up to the simplified acquisition threshold for FFP type awards, which allowed them to self-support research and education mission requirements under the \$150,000. FLC SD awards requirements over \$150,000 with assistance from NPS (Lee, 2013).

E. CURRENT OPERATIONS

The NPS contracting office currently consists of seven personnel. The Director of Contracting and Logistics Management is a General Business and Industry Series, 1101. The other personnel are all Government Contracting Series, 1102. Figure 3 outlines the organizational structure of the office. The director, GS-14, and the supervisor, GS-13, are

warranted contracting officers. The supervisory position was just filled in early part of 2014. There are five contract specialists, four of which are GS-12s and the other a GS-9.



Figure 3. NPS Contracting Office Organizational Structure

The office currently has warrant authority for purchases up to the SAT, which currently stands at \$150,000. SAT warrant authority allows the office to procure any products and services requirements up to \$150,000 in-house and to utilize streamlined acquisition procedures; all other requirements must be sent out to FLC SD for procurement.

F. SUMMARY

This chapter provided vital background information on the organization of the NPS contracting office and its spending, mission, history, and current contracting operations. This information was necessary to enable our readers to have a better fundamental understanding of the contracting office’s operations, capabilities, and limitations in identifying strategic sourcing opportunities. The next chapter provides the results of our spend analysis.

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IV. NPS SPEND ANALYSIS

A. INTRODUCTION

The purpose of this chapter is to provide the results of our spend analysis on the NPS contracting office. Additionally, we highlight how we formulated the data to make it applicable to our study. Furthermore, we discuss our strategic sourcing recommendations and indicate the limitations of our research.

We conducted a spend analysis on two and a half years of contract data which was provided by the NPS contracting office from FPDS–NG. After sorting through the data, we narrowed our focus to five major spend categories via federal service codes (FSC) to include the following:

- Education and Training,
- Support Services—Professional/Administrative/Management (PAM),
- Administrative Data Processing (ADP)—Equipment/Software/Supplies (ESS),
- Information Technology (IT) and Telecommunications, and
- Research & Development (R&D).

These general categories were further broken down into specific FSCs, which allowed us to provide recommendations for strategic sourcing. To gain a better understanding of how the DOD contracting process impacts NPS's spend, we analyzed small versus large business dollars, contract type, and the extent to which the award was competed.

Another reason for organizing the NPS contracting office's spend is to provide recommendations to strategically source goods and services, as well as to establish a program management (PM) office to organize, filter, and manage future requirements efficiently and effectively before they arrive at the contracting office. These recommendations are discussed in greater depth later in the chapter, but first we describe the steps we took to organize the data in order for us to properly conduct the spend analysis.

B. PROCESS OF OUR SPEND ANALYSIS

In this section, we discuss how the data provided was sorted in a format that would make drawing conclusions and analysis easier. The first step we took was to delete all negative dollar value contract actions, as well as all zero dollar administrative modifications. The negative dollar value contract actions represent all deobligations executed by the NPS contracting office. The removed contract actions have no added value to the spend analysis, and the negative actions would skew the overall process. The next step in this process was to combine the data from the two different DoDAACs (FLC SD and NPS). As discussed previously, all contract actions over the SAT must go to FLC SD for final signature because of the limited SAT warrant authority at the NPS contracting office. Next, we summed the total dollar values for each of the five greatest spend categories, which were Education & Training, Support Services–PAM, ADP–ESS, IT & Telecommunications, and R&D. After summing the total dollar value per category, we counted the total number of contractors per category, ensuring that each contractor was only accounted for once. The categories with the greatest spend per contractor historically present the greatest opportunity for strategic sourcing recommendations, although there is never a guarantee that this will be the case. Based on the above process, we were then able to manipulate and analyze the spend analysis using several different metrics via the Pivot Tables function in Microsoft Excel. The results that follow are the basis for the recommendations still to come in our study.

C. RESULTS OF SPEND ANALYSIS

To present the results of our spend analysis we break the results down into several categories to gain insight into how NPS spends its money. Our main focus is on spend by FSC. Categorizing spend by FSC allows us to organize our conclusions into specific categories and provide recommendations for potential strategic sourcing initiatives that NPS can take in the future.

We also look at the data by fiscal year. Since this is a government organization, NPS's opportunities to utilize strategic sourcing are limited by exclusions for small businesses and the extent to which contracts are competed. NPS contracting should also

utilize contract types to limit risk to the government while ensuring the contract structure and terms and conditions are fair and reasonable to both parties. Our spend analysis analyzes these additional considerations faced by NPS contracting and determines how these considerations might affect the strategic sourcing recommendations.

To start with, we look at spend by warrant authority because NPS can only sign contracts up to \$150,000, and contract actions above this threshold must be sent to FLC SD for signature.

1. Spend by Warrant Authority

It is worth considering actions that are signed by NPS and those in support of NPS, but that are signed by FLC SD in this spend analysis because all of the contract administration is done at the NPS contract office, regardless of the dollar threshold. Including contracts that are signed by FLC SD provides a more accurate reflection of what NPS is spending its money on because, regardless of signature authority, all of these actions are in support of the school’s mission. Also, at some point, the NPS contracting office’s warrant authority could be raised, consolidating contract actions above \$150,000 under one roof.

As shown in Table 1, FLC SD executes just over a third of the number of total actions but almost three times as much in dollars spent compared to NPS. Intuitively, this makes sense because of the change in warrant threshold, which led to signing larger contracts.

Table 1. Contract Spend by Warrant Authority

Signature Authority	FY 2012	FY 2013	FY 2014	Total
NPS	\$17,568,949.33	\$17,916,231.30	\$13,668,254.72	\$49,153,435.35
Number of actions	684	689	409	1782
FLC SD	\$54,118,414.09	\$51,267,350.72	\$30,628,900.20	\$136,014,665.01
Number of actions	245	268	286	799
Total dollars spent	\$71,687,363.42	\$69,183,582.02	\$44,297,154.92	\$185,168,100.36
Total actions	929	957	695	2,581

It must be noted that the FY 2012 data does not start until January 1, 2012, because this is when NPS gained its warrant authority. Also, FY 2014 is incomplete as well because the data was pulled from FPDS–NG by the NPS contracting office on August 17, 2014. This makes it a little more difficult to compare spend across the different fiscal years, but interestingly, the spend is similar between FY 2012 and FY 2013, even with three months of data missing from FY 2012. Now that we have summarized the total dollars spent and number of actions executed, we continue the spend analysis, breaking down spend by FSC.

2. Spend by Federal Supply Code

Spend by FSC is the most important aspect of a spend analysis because it provides an understanding of how the organization is spending its money by specific categories. Based on the data, we were able to sort by FSC and group specific codes into the more general code to find the top categories of spend. Figure 4 displays all the categories that had > \$500,000 in total spend by NPS.

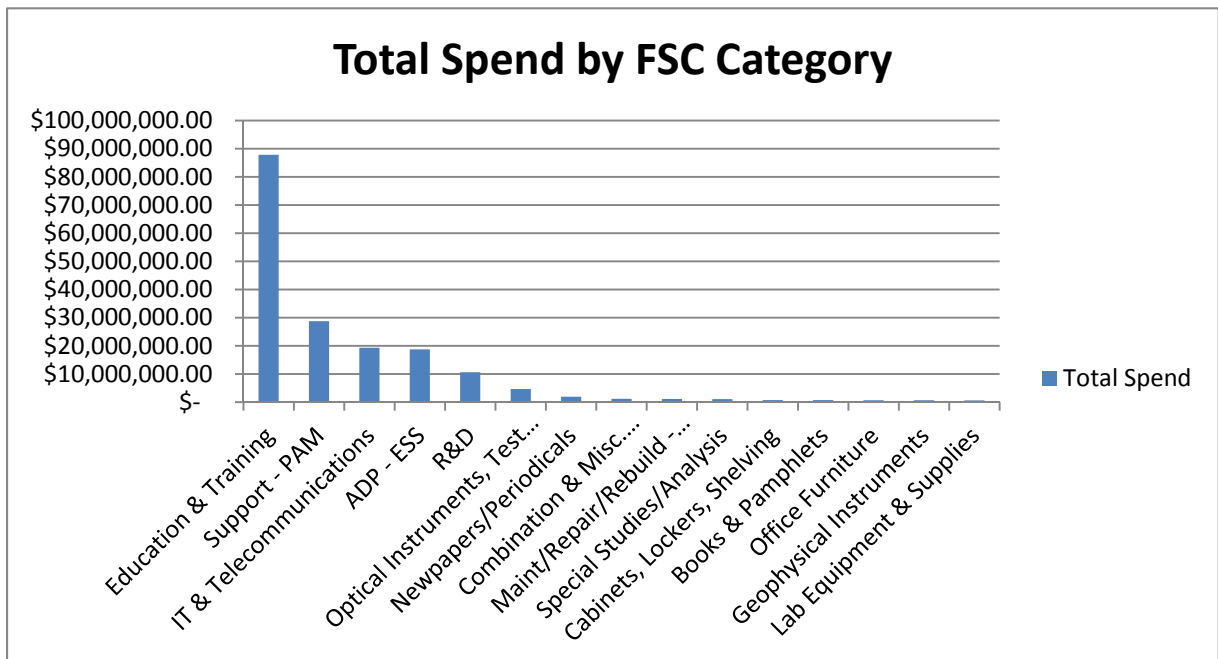


Figure 4. Total Spend by FSC Category

Next, we compared the FSC categories shown in Figure 4 to one another by percentage of total spend (see Figure 5). This comparison demonstrated that, even after narrowing our analysis to only FSC categories with a spend greater than \$500,000, there were still several categories that were insignificant. To provide the most optimal recommendations for strategic sourcing, we continued to narrow our focus even further and chose the most relevant FSC categories from this list. We decided to focus on the top five FSC categories with the greatest amount of spend, including Education & Training, Support–PAM, IT & Telecommunications, ADP–ESS, and R&D.

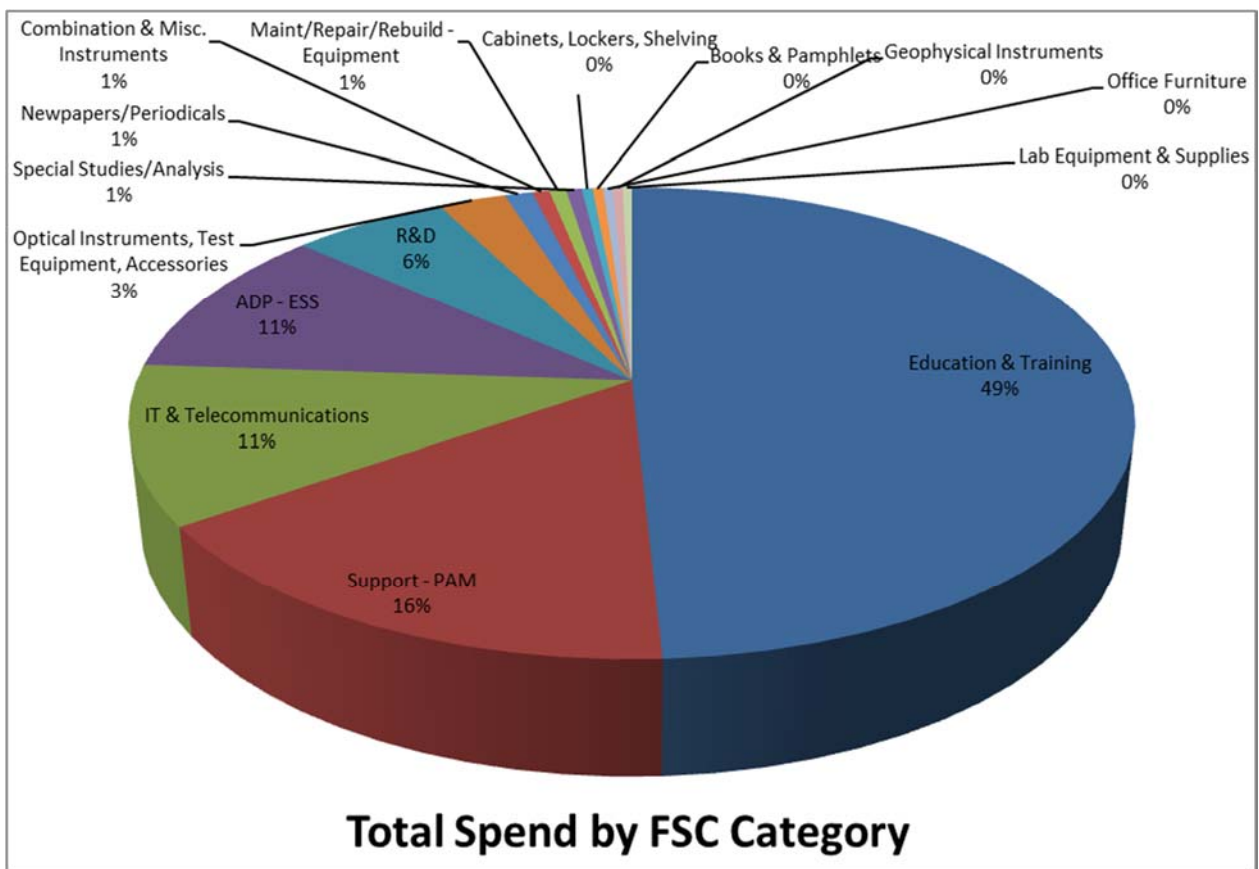


Figure 5. FSC Category Spend as a Percentage of Total Spend

Once we narrowed our focus to the five most relevant FSC categories, we started to analyze them in greater depth. First, we totaled the number of suppliers per category. Then we divided each FSC’s total spend by the number of suppliers to give us the average spend per supplier. The lowest average spend per supplier is generally the most

optimal for strategic sourcing initiatives and should be targeted first. It is also important to examine each category specifically to determine whether there are any anomalies that might keep the category from being candidate for strategic sourcing. All of our conclusions and recommendations for each category are discussed later in the chapter under Recommendations/Conclusions.

As can be seen in Table 2, NPS’s top category by total spend is Education & Training at almost \$88 million. This is 47% of the school’s total spend. Although NPS has 116 suppliers of Education & Training, this category has the highest average spend per supplier at \$756,981.59. Table 3 provides a breakdown of the subcategories and shows that the majority of spend resides within General and Education Services. However, it must be noted that not all of Education & Training can be strategically sourced because Education & Training–Tuition/Registration/Membership Fees is money spent on tuition for Navy personnel attending civilian institutions obtaining postgraduate degrees. This makes up 16% of the total spend in Education & Training and has 79 different suppliers.

Table 2. Top Five Spend Categories

Category	Total Spend	Number of Suppliers	Avg. Spend/Supplier
Education & Training	\$87,809,864.20	116	\$756,981.59
Support Service–PAM	\$28,716,787.95	57	\$503,803.30
IT & Telecommunications	\$19,323,000.61	50	\$386,460.01
ADP–ESS	\$18,721,492.51	192	\$97,507.77
R&D	\$10,607,334.30	22	\$482,151.56

Table 3. Education & Training Total Spend by Subcategory

Education & Training Subcategories	Total Spend
Certifications/Accreditations for Education Institutions	\$30,866.00
General	\$39,172,097.25
Lectures	\$1,292,491.93
Other	\$12,267,161.98
Training/Curriculum Development	\$237,691.00
Tuition/Registrations/Membership Fees	\$14,318,650.32
Vocational/Technical	\$251,526.02
Educational Services	\$20,239,379.70

Since NPS does not have control over the money being spent on tuition to civilian institutions, this subcategory should be removed from the equation. Thus, Education & Training becomes even more optimized because at \$73,590,213.88 and 37 suppliers, the average amount spent per supplier increases to \$1,988,924.69. There may be some more opportunities for strategic sourcing, but we recommend that NPS contracting not focus on this area at first because there are other categories more ripe for sourcing initiatives. One of these is Support Services–PAM, which is discussed next.

As reflected in Table 2, the category with the second greatest amount of spend is Support Services–PAM, at just shy of \$29 million. This category had a total of 22 subcategories, including library, financial, logistics support, public relations, communications, legal, program management, and advertising, to name a few. This category had the third highest number of suppliers at 57 and the second highest average spend at \$503,803.30. Although this category seems fairly optimized, we believe that there is room for further consolidation of the supply base and that NPS could utilize strategic sourcing to gain cost savings. Another opportunity for strategic sourcing—and the area that we recommend NPS start first—is within the IT realm.

The next two categories listed in Table 2 are similar in nature because they revolve around NPS’s IT infrastructure. As reflected in Table 2, \$19.3 million was spent on IT & Telecommunications over the past two and a half years, and \$18.7 million was

spent on ADP–ESS. There were 14 subcategories under IT & Telecommunications, including items such as: hardware and software maintenance service, facility operation and maintenance, Internet, IT strategy and architecture, programming, systems analysis and development, and telecommunications network management. There were 50 suppliers within this category with an average spend per supplier of \$386,460.01. Based on these figures, this is a category ripe for supply base consolidation and potential cost savings to NPS via strategic sourcing.

The next IT-based category is ADP–ESS which includes eight subcategories ranging from components, software, equipment, and configuration to analog/digital/hybrid central processing unit. ADP had the greatest number of suppliers with 192, coming in at \$97,507.77 for the average spend per supplier. We see ADP–ESS as the number one candidate for strategic sourcing, offering the potential for significant cost savings.

Unlike the other categories, these two IT-based categories likely have one customer within the organization, the Information Technology and Communications Services (ITACS) department. This makes it even easier for the NPS contracting office to work with a single customer when developing contracts that will target a few preferred suppliers capable of handling multiple requirements.

Finally, the last major category we identified from this spend analysis was R&D, which totaled \$10,607,334.30 in spend (see Table 2). We identified 22 suppliers, which resulted in an average spend per supplier of \$482,151.56. There were 21 subcategories within R&D covering a wide range of areas, from general science/technology, education, and defense to natural resources and aeronautics/space technology. Because the number of suppliers and subcategories was similar, we can conclude that there was little to no overlap within this category based on the specific functions that were needed. This category may be difficult to strategically source because each contract seems unique, even though all 21 subcategories fall under R&D.

In this section, we have examined each of our top five categories, and now we consider other aspects of the government contracting process that may have an effect on our strategic sourcing recommendations. First, we look at contract type.

3. Spend by Contract Type

The government must always consider the appropriate contract type for each acquisition to ensure the agreement is fair to both parties and will incentivize successful performance throughout the contract period. Fixed price contracts are preferable because they place less risk upon the government, and acquisition professionals must always be conscious of accepting undue risk. The majority of actions executed by the NPS contracting office are fixed price, however cost reimbursement contracts accounted for more dollars spent.

As reflected in Table 4, 2,581 contract actions were executed, and approximately 89% of the time, the NPS contracting office utilized a fixed price contract. After examining the data, we do not see contract type as having a major impact on our recommendations for implementing strategic sourcing at NPS. We recommend that NPS continues to be mindful of risk, thus protecting the government into the future. The next aspect we examined was the extent to which each action was competed by the contract office.

Table 4. Total Spend by Contract Type

Contract Type	Number of Contract Actions	Total Spend
Cost No Fee	45	\$12,235,985.07
Cost Plus Fixed Fee	266	\$85,944,322.23
Firm Fixed Price	2,263	\$86,816,189.03
Fixed Price Award Fee	4	\$137,215.27
Labor Hours	3	\$34,388.76

4. Spend by Extent Competed

When soliciting requirements to contractors, the government should always ensure to the maximum extent possible that the contracts are competed in the marketplace through full and open competition. Competition for awards drives down the price and drives competitors to produce the best product available. However, there are times when

only one vendor is capable of producing a good or service. There are also government regulations like Simplified Acquisition Procedures (SAP), which streamline the acquisition process and which should be utilized whenever possible. As evident in Table 5, there is a significant mix of how NPS competes its contracts ranging from full and open competition to sole source procurements.

Table 5. Total Spend by Extent Competed

Extent Competed	Number of Contract Actions	Total Spend
Competed under SAP	239	\$13,561,080.45
Full and open competition	1,114	\$76,048,652.99
Full and open competition after exclusion of sources	248	\$15,032,416.07
Not available for competition	70	\$16,781,976.52
Not competed	747	\$58,008,859.39
Not competed under SAP	163	\$5,735,114.94

Although federal statutes mandate competition to the maximum extent possible, strategic sourcing conflicts with this because it focuses on only the most preferred suppliers, thus reducing competition. If strategic sourcing is implemented at NPS, acquisition professionals must be aware that not all the cost savings gained by industry from strategic sourcing will be captured due to the competition requirements. Finally, we analyzed the difference between small and large business actions, which is discussed next.

5. Spend by Business Size (Small vs. Large)

The FAR states that the government must make every effort possible to award contracts to small businesses and mandates it at certain dollar thresholds. However, there are some commodities and/or services that small businesses just cannot produce due to their size and capacity. Strategic sourcing could have a negative impact on the government's small business objectives because it attempts to consolidate requirements,

which may limit a small business’s ability to compete for awards. Table 6 contains a breakdown of NPS awards to small and large businesses. With small businesses in mind, it is a bit concerning that NPS is already awarding the majority of its actions and total spend to large businesses. If the school takes our recommendations to implement strategic sourcing, they must continue to be mindful of small business participation in NPS contracts.

Table 6. Total Spend by Business Size

Business Size	Number of Contract Actions	Total Spend
Large Business	1,598	\$114,790,036.81
Small Business	983	\$70,378,063.55

D. RECOMMENDATIONS

Now that we have presented the results of our spend analysis, we have a few recommendations for NPS to become more proactive in how it spends its money and increases the overall effectiveness with the dollars it spends.

1. Contract Vehicle – IDIQ Contracts

We recommend that NPS use IDIQ contracts for all of the categories that are to be strategically sourced. The first reason that we recommend this is that an IDIQ contract would reduce administration costs to the NPS contracting office because the office would have to manage only four or five contractors through a long-term partnership rather than 37 single award contracts. Once an IDIQ is established, delivery orders could be awarded quickly and efficiently, thus reducing the procurement acquisition lead time for the requirement. Awarding only a few IDIQ contracts would allow the contracting office to build strong customer/supplier relationships, and may result in further discounts due to the long-term business relationship. Also, as the scope of work increased for the few chosen suppliers, economies of scale and efficiency would be maximized by spreading out their fixed costs over an increased workload.

Finally, this change would increase the predictability of future costs because pricing schedules would have already been negotiated within the base IDIQ contract,

reducing the variability of costs for the same commodity/service. Budgets could be managed more proactively, rather than reactively. This should provide NPS with greater certainty that its budget is being managed effectively during a strained fiscal environment.

2. Education & Training

Our next recommendation is to strategically source Education & Training requirements, except for the tuition for civilian institutions. Although this category has the highest average spend per supplier at close to \$2 million, NPS spent over \$73 million within the past two and a half years, which is close to 50% of the school's entire purchases. We recommend NPS compete an IDIQ contract for Education & Training requirements. By strategically sourcing this category, NPS can award IDIQ contracts to the most capable suppliers.

3. Support Services – PAM

Next, we recommend strategically sourcing Support Services–PAM requirements. With an average spend per supplier of \$500,000 and 57 suppliers, this category is another great opportunity for the NPS contracting office to identify the most capable contractors. By developing an IDIQ that reduces the supplier base, redundant administration costs can be eliminated.

4. ADP - ESS and IT & Telecommunication Services

Our last strategic sourcing recommendation is in the IT realm, which includes the ADP–ESS and IT & Telecommunications categories. With 192 suppliers of ADP requirements and 50 suppliers of IT & Telecommunications, these both have low average spend per supplier numbers at approximately \$97,500 and \$386,500, respectively. The ADP category offers the greatest opportunity to increase its average spend per supplier, and a reduction in the supply base will likely create savings for the organization. By working with ITACS and other NPS consumers of technology, the NPS contracting office can tailor specific contract vehicles, whether blanket purchase agreements (BPAs)

or IDIQs, to suit the needs of the customer while reducing the administrative burden of managing so many different contracts.

5. Barriers to Implementation

Although many recommendations sound great in theory, if an organization does not have the capability to implement them, or has significant barriers it must overcome, the odds of successful execution dwindle. In our research, we identified the following barriers to the implementation of strategically sourcing similar NPS requirements.

First, the NPS contract office lacks the warrant authority to execute all of its actions. By combining like requirements into larger contracts, the administrative time increases because FLC SD must be included in the process. As the NPS contracting office matures, it would behoove them to gain a higher warrant authority, granting full control over all the school's requirements. A short-term solution would be for FLC SD to award the IDIQ contracts centrally and then decentralize authority to NPS to award and manage the delivery orders. This would reduce the administration man-hours that occur during the award process, thus streamlining the procurement acquisition lead time while still ensuring that FLC SD has proper accountability and oversight.

Another possible barrier could be the lack of knowledge on how to conduct a spend analysis, strategically source contracts, or in general, proactively manage requirements. The federal government as a whole tends to manage requirements reactively, and the concept of strategic sourcing within the public sector is slow to catch on. There is a lack of training within the DOD on strategic sourcing, and it is usually only reserved for specialized units within each service. Unless the NPS contracting office has professionals that have been trained and educated on strategic sourcing or have previous experience in industry with it, the likelihood that these recommendations get implemented quickly and efficiently decreases.

The last major barrier involves the lack of an organizational infrastructure at NPS to properly implement and manage the resulting acquisition programs and strategic sourcing recommendations discussed in this section. The NPS contracting office is already thought to be undermanned based on the number of contract actions/annual spend that flows through its office on an annual basis. To allow for better acquisition

management of these programs, we recommend NPS add a separate program management office (PMO) to better serve its customers and manage requirements.

6. Program Management Office

The programs that result from our strategic sourcing and IDIQ contracts recommendations would require a greater emphasis on the front end of the acquisition process, mainly with requirements determination and demand management. These areas are beyond the scope and authority of the NPS contracting office. Thus, once implemented, the PMO would manage acquisition programs such as Education & Training, PAM, and ADP – ESS & IT and Telecommunications.

The PMO would serve various other functions as well. It could offer customer education to the four different schools' acquisition processes and regulations, instruct employees on requirements development and management, and be a filtration mechanism that bundles similar requirements. More specifically, the PMO would be responsible for helping to develop SOWs, conducting market research, and also developing government cost estimates. The PMO could then help project and organize future requirements from all the different organizations within NPS and thus provide sound recommendations for when a commodity or service should be strategically sourced or purchased in bulk. Each program would have assigned contracting officer representatives providing oversight of the IDIQ contractors to ensure the NPS mission is accomplished successfully. Finally, with the implementations of a PMO, the acquisition process would become more proactive, actively managing requirements, rather than the current inefficient, reactive approach. Currently, NPS has no such function to manage requirements and develop requirements documents. Without this organization our strategic sourcing initiatives would be difficult to implement and manage effectively.

7. Annual Spend Analysis

Finally, we recommend that NPS conduct an annual spend analysis. This will help the organization set goals for future spend and, as each year closes, help NPS analyze how well those goals were achieved. By conducting spend analyses now and into the future, NPS can gain a better understanding of recurring requirements, and also help

project future requirements. This proactive approach, along with the establishment of a PMO, would help the organization become more efficient and effective in how it spends its money, ensuring that dollars are not wasted and that the NPS mission is accomplished. Now that we have discussed our recommendations, we next identify the limitations of our research.

E. LIMITATIONS OF RESEARCH

In this section, we discuss the limitations of research for our spend analysis study on the NPS contracting office. First off, the data provided by the contracting office only dates back to January 2012, which means the analysis was conducted on roughly two and a half years of contracting activity. The data only goes back this far because this is the timeframe during which NPS received its contracting warrant authority. More specifically, we analyzed FY 2012 (not a complete year), FY 2013 (complete year), and FY 2014 (incomplete year). Thus, of the data we analyzed, only one complete fiscal year was studied. Ideally, for this type of study, we would have a minimum of five years of data, possibly more if the data were readily available.

Another issue we faced throughout the analysis was that the data did not include who the customer was for each requirement. NPS is made up of four schools, and knowing which of the schools was purchasing particular commodities or services would have provided more opportunities for specific strategic sourcing recommendations.

Finally, because NPS's mission and construct is niche in nature, the spend analysis and recommendations may not be universally applied to all organizations or entities. However, they could apply to other DOD academic institutions with similar missions and constructs.

F. SUMMARY

The purpose of this chapter was to present the results of our spend analysis as well as to provide recommendations based on those results. We identified five potential categories in which to utilize strategic sourcing and provided recommendations to improve the overall efficiency and effectiveness of the NPS acquisition process. Finally, we identified some of the barriers to implementing our recommendations and concluded

with the limitations of our research. In the next chapter, we discuss our final conclusions and areas for further research.

V. SUMMARY, CONCLUSION, AND AREAS FOR FURTHER RESEARCH

A. SUMMARY

This chapter provides a summary of our research, a conclusion that addresses our research questions and recommendations based on the results of our spend analysis, and suggested areas of further research.

The DOD as a whole is starting to recognize the positive effects that strategic sourcing has on an organization and how it can improve the efficiency and effectiveness of an organization's purchasing power, which is becoming more important during this constrained budgetary environment. Spend analysis is a useful strategic sourcing tool to identify an organization's potential spending inefficiencies and to present areas to leverage its purchasing power to increase savings. As the organization learns how to consolidate requirements effectively through strategically sourced suppliers, the management process becomes more efficient, thus reducing administrative costs and maximizing value through economies of scale.

The purpose of our research was to apply strategic sourcing initiatives to the NPS contracting office by first conducting a spend analysis on the organization's last two and a half years of spend data. By identifying areas that had inefficiencies in how the organization purchases goods and services, we were able to provide recommendations for NPS to leverage its purchasing power, enabling it to better accomplish its overall mission now and into the future. Next, we revisit our research questions and provide concluding thoughts on our NPS spend analysis.

B. CONCLUSION

This research attempted to analyze NPS spend from FY 2012–FY 2014 and make strategic sourcing recommendations based on the results of the analysis and spend patterns. The data provided by the NPS contracting office was sufficient and complete enough to conduct the analysis and make several strategic sourcing recommendations to

the institution. Throughout the course of this study, we also aimed to answer the four research questions presented in Chapter 1.

1. How can strategic sourcing be implemented to improve efficiency and effectiveness of the NPS contracting office?

The results of our analysis led us to several different strategic sourcing recommendations. To briefly recap, we recommend that NPS strategically source Education & Training requirements, except for the tuition for civilian institutions. This category makes up over 50% of the school's entire spend, which is why we recommend NPS establish an IDIQ contract to the most capable suppliers, allowing delivery orders to be awarded. This will help eliminate redundant administrative actions and costs that are associated with awarding contracts to 37 different suppliers.

Along the same lines as Education & Training, Support Services–PAM requirements should also be strategically sourced. With almost 60 contractors each averaging a spend of \$500,000, this presents another opportunity for NPS to identify the most capable contractors and again award IDIQ contracts. The use of IDIQ's will lead to a smaller, more manageable supply base, eliminating redundancy and reducing administrative costs through delivery orders on the IDIQ contracts.

Finally, ADP–ESS and IT & Telecommunications represent the final two categories for potential strategic sourcing initiatives. Each of these categories has low average spend per supplier. Through customer coordination and demand management, these requirements could be procured more efficiently with the IDIQ and delivery order process.

2. How can a spend analysis identify campus-wide requirements and provide a better understanding of how to consolidate purchases?

As presented in our research, a spend analysis reviews an organization's purchases to obtain a better understanding of what the organization is buying, how much it is spending, and who are its customers and suppliers. With this analysis, an organization is able to develop sourcing strategies, consolidate its supply base, reduce the actual number of transactions, and eliminate duplication. The strategic sourcing

recommendations made to NPS are results of the successful spend analysis we conducted. Thus, through this spend analysis, we identified campus-wide requirements that could be consolidated and managed strategically using more efficient procurement approaches.

3. What contract vehicles are the most optimal for major commodities and services procured campus-wide?

After conducting the spend analysis, we recommend IDIQ contracts as the most appropriate contract vehicle to capitalize on strategic sourcing initiatives at NPS. After identifying the most competent and capable suppliers to award IDIQ contracts to, the contracting office can then simply cut delivery orders from the IDIQ contracts, thus streamlining the acquisition process and reducing the administration time spent on awarding new contracts for every requirement. These IDIQ contracts will also establish longer term relationships with suppliers and hopefully promote a stronger supplier–customer relationship.

4. How can a program management approach to managing contract requirements improve the overall acquisition process?

A major barrier we presented was the fact that NPS lacks the organizational infrastructure and capacity to properly implement and manage the acquisition program as well as our strategic sourcing recommendations. Thus, adding a PMO would help to better serve school customers and manage requirements. The PMO would focus on customer education, requirements development, requirement projection, and strategic sourcing expertise. In addition, the PMO would manage the acquisition programs mentioned previously to include Education & Training, PAM, and ADP – ESS & IT and Telecommunication services, resulting in more streamlined and efficient acquisition processes at NPS.

C. AREAS OF FURTHER RESEARCH

Our research focuses solely on how NPS spends its money to support its mission. A similar analysis could be applied to other military academic institutions such as the United States Air Force Academy (USAFA), United States Military Academy (USMA), United States Naval Academy (USNA), Air Force Institute of Technology (AFIT), and

the Defense Language Institute (DLI). These studies could analyze the respective institution's spend similar to the way this study was conducted, looking for opportunities to strategically source various DOD commodities and services amongst the entities.

Other possible research could assess the effects of creating an interagency contracting vehicle in support of AFIT and NPS, or a combination of the schools listed previously. This could further combine similar requirements across the agencies, and through the award of IDIQ contracts. The delivery order process would further streamline the acquisition process and reduce administrative time and costs. If it is found that the previously mentioned military academic institutions purchase similar services and commodities, DOD-wide IDIQ contracts in an interagency environment would provide a possibility for strategic sourcing.

Finally, one other interagency idea that could be researched is a Monterey Bay IDIQ contract servicing both NPS and DLI. Because these institutions are located less than a mile apart, having one contract that services both organizations is a legitimate possibility. A spend analysis would need to be conducted on DLI, as well as a study to determine the potential cost savings.

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