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Implementing Category Management across United States Special Operations Command (SOCOM)

December 2020

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Graduate School of Defense Management

Naval Postgraduate School

Prepared for the Naval Postgraduate School, Monterey, CA 93943.

ACQUISITION RESEARCH PROGRAM
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ABSTRACT

The purpose of this research is to implement category management (CM) in the United States Special Operations Command (SOCOM) enterprise. It also examines, classifies, and analyzes expenditures and spending trends for SOCOM. A spend analysis was conducted to identify spending trends and provide opportunity analysis to leverage buying power. Our methodology includes analyzing spend reports for SOCOM as a whole and conducting a gap analysis between the current CM state and the two future states: initial desired state and future ideal state. These analyses provide visibility and insight into SOCOM's expenditures and facilitate recommendations to close the gap and effectively implement CM. Our recommendations include spend-related actionable items for SOCOM to consider when implementing CM, immediate actionable items for SOCOM to stand its initial small-scale CM function to operate at initial operating capability (IOC), and future actionable items for SOCOM to implement CM at full operating capability (FOC).

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LIST OF ACRONYMS AND ABBREVIATIONS

AFBOP	Air Force Business Operations Plan
AFICA	Air Force Installation Contracting Agency
AFICC	Air Force Installation Contracting Center
AFICC/KAB	AFICC Enterprise Solutions Directorate
AFIMSC	Air Force Installation & Mission Support Center
AFIT	Air Force Institute of Technology
AFMC	Air Force Materiel Command
AFSC/PZ	Air Force Sustainment Center Contracting
BAM	business activity monitoring
BIC	best-in-class
BICC	Business Intelligence Competency Cell
BOA	basic ordering agreement
BPA	blanket purchase agreement
CAP	cross-agency priorities
CAR	contract action report
CEP	category execution plans
CFT	cross-functional team
CIR	category intelligence report
CLIN	contract line-item number
CM	category management
CMAO	category management accountable official
CMC	Category Management Council
CMLC	Category Management Leadership Council
CONOPS	concept of operations
CPARS	Contractor Performance and Rating System
CPE	continuing professional education
CSF	critical success factors
CSV	comma separated values
CYBER	cyber security, operations, intelligence, and defense
DAU	Defense Acquisition University

DC	definitive contract
DO	delivery order
DoD	Department of Defense
DPC	Defense Pricing and Contracting
DUNS	Data Universal Numbering System
ECITS	Electronic Contracting Information Transfer System
ESS	enterprise sourcing squadrons
ETLA	extract, transform, load, and analyze
FM	financial management
FOC	fully operating capability
FPDS-NG	Federal Procurement Data System – Next Generation
FY	fiscal year
GAO	Government Accountability Office
GSA	General Services Administration
HCA	head of contracting activity
HQ	headquarters
IDC	indefinite delivery contract
IDIQ	indefinite delivery indefinite quantity
IOC	initial operating capability
IT	information technology
ISR	intelligence, surveillance, and reconnaissance
MFF	military freefall
MFP	major force program
MFT	multi-functional team
MIPR	military interdepartmental purchase request
MISO	military information support operations
NDBOP	National Defense Business Operations Plan
NDS	National Defense Strategy
OFPP	Office of Federal Procurement Policy
OLAP	online analytical process
OMB	Office of Management and Budget
OPORD	operational order
OSINT	open source intelligence

OSPEC	operational security
PED	portable electronic devices
PMA	President Management Agenda
PM	program management
PO	purchase order
POTFF	preservation of the force & family
PSC	product service code
PSO	program support office
P&G	Proctor & Gamble
RAND	research and development
SAF/AQC	Assistant Secretary of the Air Force for Acquisition, Technology and Logistics
SAF/MG	Deputy Undersecretary of the Air Force, Management
SAO	senior accountable official
SIPR	Secret Internet Protocol Router
SME	subject matter experts
SMI	supplier market intelligence
SOCOM	United States Special Operations Command
SOF	Special Operations Forces
SRM	supplier relationship management
SUM	spend under management
TSOC	Theatre Special Operations Command
UPS	United Postal Service
USAF	United States Air Force
USC	United States Code

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I. INTRODUCTION

In a 2009 report titled *The Nation's Fiscal Health,* the United States Government Accountability Office (GAO) notes that the federal government's current fiscal path is unsustainable. The Department of Defense (DOD) has been looking for ways to decrease the amount of money spent on acquisition requirements. Category management (CM) is an initiative that agencies use to achieve cost savings and improve spend management practices. In 2014, the United States Office of Management and Budget (OMB) issued a memo that launched the CM initiative for the DOD (OMB, 2014). More recently, the OMB published guidance directing agencies to accomplish five key CM actions to better position themselves in managing spend (OMB, 2019, p. 3). The United States Special Operations Command (SOCOM) intends to improve their spend management in response to the OMB guidance. The purpose of this chapter is to introduce our research for the implementation of CM across SOCOM. It presents background information on SOCOM and its current initiatives for spend management. We then define the purpose of the research, our research questions, and the methodology and limitations of this study. We conclude this chapter with a summary of the organization of the remainder of the report.

A. SOCOM BACKGROUND

SOCOM is "the unified combatant responsible for training, establishing doctrine, and equipping all special operations forces (SOF) of the Army, Air Force, Marine Corps, and Navy" (Schwartz & Purdy, 2018, p. 2). SOCOM was established on April 16, 1987, and headquartered in MacDill Air Force Base, Florida. Its primary mission is to "develop and employ fully capable SOF to conduct global special operations and activities as part of the joint force to support persistent, networked and distributed combatant command operations and campaign against state and non-state actors to protect and advance U.S. policies and objectives" (United States Special Operations Command, 2020, p. 14). The unique mission placed upon SOCOM has given it exclusive acquisition authorities. It was the first combatant command trusted with acquisition authority, in fiscal year (FY) 1987 (Schwartz & Purdy, 2018).

Title 10 United States Code (U.S.C.) 164(c) provides SOCOM the authority to "validate and establish priorities for requirements; ensure combat readiness; develop and acquire special operations-peculiar equipment, and acquire special operations-peculiar material, supplies, and services; and ensure the interoperability of equipment and forces" (Schwartz & Purdy, 2018, p. 2). However, these authorities are only applicable to special operations forces (SOF) peculiar items. SOF peculiar funding, also known as Major Force Program (MFP) 11 requirements, is executed by SOCOM. Requirements that are not considered MFP 11 are executed through one of the military departments. 10 U.S.C. 167 gives authority to SOCOM's acquisition executive to

> negotiate memoranda of agreement with the military departments to carry out the acquisition of equipment, material, and supplies; supervise the acquisition of equipment, material, supplies, and services; represent the command in discussions with the military departments regarding acquisition programs for which the command is a customer; and work with the military departments to ensure that the command is appropriately represented in any joint working group or integrated product team regarding acquisition programs for which the command is a customer. (Schwartz & Purdy, 2018, p. 3)

These authorities are exclusive to SOCOM and give the organization the ability to streamline their acquisition process. It is important to note that these authorities do not completely exempt SOCOM from following statutory and regulatory guidelines, and there are no exemptions or waivers from acquisition requirements.

SOCOM's objectives in implementing CM focus on the following key main areas: (1) portable electronic devices (PED), (2) open source intelligence (OSINT), (3) Intelligence, Surveillance, and Reconnaissance (ISR), (4) Military Information Support Operations (MISO), (5) cyber security, operations, intelligence, and defense (CYBER), (6) military freefall (MFF), and (7) high categories of spend. SOCOM stated that the spend data for the first six main areas are classified as "SECRET" and not available to anyone without the clearance; therefore, these six areas are not part of the spend analysis. Our team will utilize and focus on Federal Procurement Data System – Next Generation (FPDS-NG) data, as it is publicly available, and construct a CM framework that can be tailored by SOCOM to incorporate the SECRET areas of spend mentioned above.

B. PURPOSE OF RESEARCH

The purpose of this research is to construct an initial framework to implement a CM concept across the SOCOM enterprise. Spend management concepts first surfaced in the Federal Government in May 2005 when the OMB, Office of Federal Procurement Policy (OFPP) released a memo introducing strategic sourcing as a government-wide initiative for all federal agencies (OMB, 2005). Since the launch of the memo, the U.S. government has been looking for ways to integrate spend management to achieve substantial cost savings (OMB, 2005). The first attempt was strategic sourcing, which is "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, p. 1). However, strategic sourcing successes were not substantial and did not cover the entire enterprise (Air Force Category Management Program Support Office [USAF CM PSO], 2020b). In December 2014, a memo from the OFPP entitled *Transforming the Marketplace: Simplifying Federal Procurement to Improve Performance, Drive Innovation, and Increase Savings* highlighted the benefits of CM in an effort to enhance and build upon the initial strategic sourcing initiative (OMB, 2014). In April 2017, another memo from the OMB entitled *Comprehensive Plan for Reforming the Federal Government and Reducing the Federal Civilian Workforce* reinforced CM as a concept to improve efficiency, effectiveness, and accountability of the federal government (OMB, 2017). In March 2019, federal agencies were directed to align to CM and its principles, implement key CM actions, and bring their spend under management (OMB, 2019). By leveraging key CM principles and considerations, we will provide a tailored framework for implementation of CM across the SOCOM enterprise.

C. RESEARCH QUESTIONS

This research project aims to answer the following questions:

1. How can the United States Special Operations Command (SOCOM) implement category management to execute at the speed of relevance for operators?
2. What key considerations of category management should SOCOM focus on to be successful in implementing category management as a practice?

3. What governance structure is needed to effectively implement category management?

D. METHODOLOGY

We conducted a spend analysis and gap analysis to answer our research questions. First, we identified the federal government's current and past efforts to bring spend under management. We reviewed best practices and lessons learned through academic research studies, peer-reviewed journals, DOD policies and initiatives, GAO reports, and private industry best practices. Next, we extracted FPDS-NG (FY 2015 through FY 2019) spend data to conduct a spend analysis. We load, transform, and analyze this data utilizing Microsoft Excel's pivot table function. The use of pivot tables allows our team the ability dive into the data and assist us in identifying trends and categories with high amounts of spend.

To perform a gap analysis, we utilized the GAO's 2005 *Framework for Assessing the Acquisition Function at Federal Agencies* to construct a tailored framework to assess the state of CM function in SOCOM. This framework consists of four interrelated cornerstones, elements, and critical success factors (CSF). To inform the current CM state of SOCOM, we conducted telephone conversations, email correspondence, and interviews with SOCOM personnel. After obtaining input from SOCOM, we identified and established two future states for SOCOM: an initial desired state and a future ideal state. The gap between the two states (current & future) allow our team to do in-depth analysis on how SOCOM can bridge this gap along with achieving SOCOM's objectives in implementing CM.

E. ORGANIZATION OF PAPER

In Chapter II, we present a literature review on the concept of CM, as well as a background on the DOD and the USAF's implementation of CM. We highlight how CM relates to other spend management theories and why our team selected CM as the theory for the SOCOM enterprise. We then discuss key considerations such as spend analysis, organizational alignment and leadership, expertise and capability, business intelligence and market intelligence, supplier relationship management (SRM), and a framework

determination to apply these key considerations in the implementation of CM across an organization.

In Chapter III, we discuss the two methodologies we utilized for our study, a spend analysis and a gap analysis. This chapter includes a discussion of a spend analysis, which is a key component in implementing CM. The USAF established key CM principles (1) Categorization of spend, (2) Assign Cost Ownership via Category Manager, (3) Develop Business Intelligence, (4) Drive Results (USAF CM PSO, 2020b). Our team utilized a spend analysis to categorize SOCOM's spend and to comply with the first principle. This chapter also contains a detailed description of our team's efforts on Microsoft Excel's pivot table function, utilizing FY 2015 through FY 2019 FPDS-NG data. We then discuss how our team leveraged the GAO framework to build a tailored framework for CM. Lastly, we performed a gap analysis between SOCOM's current CM state and future states utilizing the aforementioned tailored CM framework.

In Chapter IV, we present the results of the spend analysis conducted on SOCOM's spend from FY 2015 through FY 2019. This analysis provides our team insight into SOCOM's spend and areas of opportunities to use for CM implementation where applicable. We also present the findings of the gap analysis performed between the current state and the two future states using our tailored framework to assess a CM function. These results drive our recommendations for SOCOM to close the CM gap within their enterprise.

Chapter V concludes with definitive answers to SOCOM's research questions. The chapter concludes with recommendations for future research activities.

F. CONCLUSION

This chapter introduced the research question on the implementation of CM across the SOCOM enterprise. It presented an introduction of the paper, background information on the need for spend management, SOCOM's background, purpose of the research being performed, followed by the reiterations of the research questions, and methodology. Lastly, this chapter concluded with a summary outlining the organization of the remainder of the report. The next chapter presents a review of the literature on CM, efforts to implement

CM across the DOD, the USAF, and SOCOM, and key considerations for its implementation.

II. LITERATURE REVIEW

The purpose of this chapter is to examine literature from sources pertaining to the background and theories of CM, its application to SOCOM's enterprise, and key considerations for successful CM implementation.

A. CATEGORY MANAGEMENT

Over the last decade, the DOD has prioritized the need to "eliminate redundancies, increase efficiency, and deliver more value and savings from the Government's acquisition programs" (OMB, 2019, p. 1). In 2014, a memo was issued by the OMB stating, "there is a critical need for a new paradigm for purchasing that moves from managing purchases and price individually across thousands of procurement units to managing entire categories of common spend and total cost through category management" (OMB, 2014, p. 2). This memo effectively launched the CM initiative across the DOD. More recently, in the memo *Department of Defense Reform Focus in 2020,* Defense secretary Mark Esper echoed:

> The National Defense Strategy requires relentless and ruthless prioritization in order to balance near-term challenges and prepare for great power competition, particularly given the fiscal realities confronting the Nation. Reforming the Department to free up time, money, and manpower is not optional—it is a strategic imperative if we are to modernize the Joint Force and improve its readiness and lethality. (Secretary of Defense, 2020, p. 1)

Leaders have recognized the importance of enhancing buying power, reducing costs, and making better use of government resources. CM is a framework the DOD has determined to be effective in achieving the goals mentioned above. The next section covers the background of the CM framework within the DOD.

1. Background of Category Management in the Department of Defense

CM includes the "practice of identifying core areas of spend, collectively developing heightened levels of expertise, leveraging shared best practices, and providing acquisition, supply and demand management solutions" (Defense Pricing and Contracting [DPC], 2020, para. 1). As of March 2019, the OMB has mandated that all government agencies adopt the use of CM (OMB, 2019). O'Brien (2019) defined CM as follows:

> Category management is a strategic approach that focuses on the vast majority of an organization to spend on goods and services with third-party suppliers. It is a process-based approach and incorporates many familiar aspects of business improvement processes and change management. It is not an approach that is confined to purchasing but typically requires the active participation of engagement with stakeholders, functions, and individuals across the business to make it successful. Organizations therefore have to make an investment in time and commitment in order to deploy category management; however, the return on this investment is potentially very large. (p. 5)

In the book *Purchasing and Supply Change Management,* Monczka et al. (2015) offered a broad definition of CM as it pertains to industry when they stated, "Category management is the process of developing insights into stakeholder requirements, comparing these to external industry intelligence, supply base capabilities and operational risks, and developing a strategy to align internal requirements with external supply market conditions" (Monczka et al., 2015, p. 47). In *Category Management: A Concept of Operations for Improving Costs at the Air Force Installations*, CM is defined more precisely as the "strategic management of spend categories using an array of tools to improve costs and achieve best-in-class category performance" (Keller et al., 2014, p. 21). Although the definitions of CM vary from author to author, the theme is clear in all that CM is a strategic framework that identifies categories of common goods and services, which are then analyzed and strategically managed to improve the overall value to the organization.

Acquisition Gateway offered a tool, Category Management 101 Deck, to provide readers the opportunity to learn how CM was being applied across the government. More specifically, it provided the CM strategic approach, which can be viewed in Figure 1.

Figure 1. CM Strategic Approach. Source: General Services Administration (2020).

This strategic approach encompasses the ideas of CM to be determining categories, analyzing spend, using tools to make strategic decisions to increase efficiency, and improve purchasing power.

The DOD has emphasized that strategic sourcing is a key practice within the CM framework (DPC, 2020). Strategic sourcing is "the collaborative and structured process of critically analyzing an organization's spending and using this information to make business decisions" (DPC, 2020, para. 2). Additionally, Clay Johnson, deputy director of management, echoed a similar definition of strategic sourcing and further discussed that strategic sourcing helps agencies "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 each dollar spent" (OMB, 2005, p. 1). Monczka et al. (2015) stated:

> A sourcing strategy is typically focused on a category of products or services, and for that reason, the strategy is sometimes called a category strategy. A category strategy is a decision process used to identify which suppliers should provide a group of products or services, the form of contract, the performance measures used to measure supplier performance, and the appropriate level of price. (p. 208)

The government's decision to adopt strategic sourcing and CM frameworks enables federal agencies to buy smarter and reap possible benefits from adopting these practices. O'Brien (2019) shared his opinion of the possible benefits from implementing CM:

> Category management holds the potential to secure game-changing value including significant price reduction but also improved value and effectiveness, and reduced risk, but can also help build the value proposition to our end customer through supply base innovation or collaboration to create new differentiators or competitive advantage. (p. 42)

CM is also considered a commercial best practice with companies like United Parcel Service (UPS), Walmart, Kroger, and Proctor & Gamble reporting an average of 11.1% savings across industries (Defense Acquisition University [DAU], 2020). Commercial industries have reaped CM benefits through reduction of repetitive contracts and overall contract administration costs such as bids and proposals (General Services Administration [GSA], 2018). There is no question that a significant number of sources state there are benefits from an organization's implementation of CM, including cost savings, process improvements, better management decisions, and best-in-class (BIC) category performance. However, according to GAO, CM as federal-wide initiative has yet to realize its intended results and benefits (Pegnato, 2020). Next, we discuss the USAF's implementation of CM.

2. United States Air Force Strategy to Implement Category Management

The USAF has paved the way within the DOD, providing other agencies a strategy that can be tailored to their specific organization for successful implementation of CM. They have also partnered with the Defense Acquisition University (DAU) to offer a course called *Introduction to Air Force Category Management*. Therein, the USAF defines CM as "a structured, data-driven business practice whereby an organization strategically analyzes and manages common categories of spend in order to eliminate redundancies, increase efficiencies, and enhance mission effectiveness" (DAU, 2020). The Air Force Installation Contracting Center (AFICC) published *Category Management: A Concept of Operations (CONOPS) for Improving Costs at the Air Force Installation* to provide an initial conceptual framework for implementation of CM in 2014 (Keller et al., 2014). The following year, in 2015, the USAF developed a pilot team in AFICA (now AFICC), which developed all-encompassing USAF CM principles, processes, and tools using OMB CM guidance and the CONOPS. It then analyzed a portion of the USAF spend for the category of Facilities and Construction (AFICA, 2017).

The Business Intelligence Competency Cell (BICC) was then activated "to provide actionable business intelligence to the USAF cost owners intended to optimize performance, reduce cost, and maximize value" (DAU, 2020, p. 1). After the BICC pilot team finalized their findings, they created a Category Intelligence Report (CIR) for grounds maintenance and integrated solid waste management, which generated mission improvement opportunities (AFICA, 2016a). The opportunities identified from both CIR reports were to review installations that were below the USAF benchmark cost for the specific services to obtain their best practices which could be shared at other installations. The recommendations provided to close the cost gaps were collection of more data, establishing regional benchmarks to identify bases that are over the USAF average cost for their region, and that subject matter experts (SME) should lead staff visits at the USAF installations with the largest cost gaps in an effort to determine the root cause of the cost gap, and help the installation in the development of a strategy for closing the gap (AFICA, 2016b). The USAF created a CM implementation and support plan and governance structure using results from the pilot teams, memos from OMB, and the CONOPS.

In March 2017, the USAF CM PSO was established to support implementation and execution of the CM program. Then the undersecretary of the USAF, appointed deputy undersecretary of the Air Force, Management (SAF/MG), as the USAF Category Management Accountable Official (CMAO), which formalized ownership of the USAF CM program to this position. SAF/MG then appointed senior cost owners to manage categories with significant spend. In 2018, the first USAF Category Management Council was established with subsequent quarterly meetings. By the end of 2018, category managers were appointed with the task to improve mission value and lower total cost of ownership through disciplined data-driven cost management (DAU, 2020).

In 2019, the OMB memo entitled *Category Management: Making Smarter Use of Common Contract Solutions and Practices* provided updated CM guidance and directed agencies to reduce unaligned spend, develop effective management vendor strategies, implement demand management strategies, share data across enterprises, and train and develop workforce in CM. In 2019, the CM program was responsible for analyzing $1.9 billion of USAF spend across 1,431 contract actions and formulating 31 strategies, resulting in cost savings and avoidance of over $146 million (DAU, 2020). Currently, the

USAF has aligned CM to strategic imperatives such as the National Defense Strategy, the President's Management Agenda (PMA), the Air Force Business Operations Plan, and the Air Force Infrastructure Investment Strategy (DAU, 2020). Furthermore, the USAF implemented several performance measures and metrics reportable at the federal level (OMB). These metrics evolve over time and ensure the USAF CM program meets the key CM actions and requirements mandated by the OMB. The USAF CMAO reports to OMB on a quarterly-basis or as required by OMB on areas such as savings, reduced contract duplication, spend under management (SUM), vendor and demand management, and small business participation. Table 1 displays the primary performance measures implemented by the USAF to ensure compliance with the OMB guidance.

Table 1. USAF's CM Program Performance Measures. Adapted from Air Force Category Management Program Support Office (2020b).

USAF's Primary Performance Measures Reportable to OMB	
Metric Name	**Description**
Spend Under Management (SUM)	The overall measure of maturity for the federal CM Program. It is one of the principal measures by which adoption of Category Management is evaluated. OMB is tracking the percentage of agency SUM.
Best in Class (BIC)	The overall measure of leveraging government spends on utilizing a strategic contract solution (i.e. GSA OASIS) that has been designated and approved as BIC. OMB is also tracking the percentage of agency BIC.
Vendor Management	Overall measure of the development and strategies to enhance communication with strategic suppliers who are directly involved with mission-essential tasks. OMB is monitoring the performance and progress of each agency.
Demand Management	Overall measure of the implementation of best practices to eliminate inefficient purchasing and consumption behaviors. OMB is monitoring the performance and progress of each agency.
Cross-Agency Priority Goals (CAPs)	The OMB has established Cross-Agency Priority Goals for Category Management and requests status updates for each goal at recurring intervals.
Small Business Participation	The overall measure of the USAF's small business alignment with the federal program, and the Air Force Category Management Secretariat will establish metrics to track and report progress toward achieving the small business goals.

3. How Category Management Relates to Other Spend Management Theories

There are different ways organizations can manage their spend. "Spend Management is the foundation for every purchasing strategy" (Van Weele, 2009, p. 14). Heinzmann (2018) stated:

> Spend management in practice varies considerably from business to business, depending on factors such as the maturity of the procurement or finance function, the fluctuating structure of the supply base and changes in business strategy that affect operational decision-making. Solution providers that hope to successfully serve these organizations must therefore

> be capable of adapting to constantly changing business scenarios and evolving to meet the unique needs demanded of complex spend management challenges. (para. 3)

There is no one-size-fits-all management theory when it comes to spend, and it is important for organizations to understand their organizational structure for spend management decisions to be made more effectively. For example, strategic sourcing as a spend management theory is related to CM because strategic sourcing in itself is one of the non-tangible benefits of CM. CM as another strategic theory to spend management has tangible and non-tangible benefits including cost reduction, innovation, improved value and effectiveness, reduced supply chain risk, competitive advantage, total spend under management, cross-functional working, knowledge sharing, and strategic sourcing (O'Brien, 2019). The factors that affect these benefits are procurement maturity, quality of deployment, organizational readiness, and category opportunity. Quality of deployment is the effectiveness of processes, available resources, the governance structure, and capabilities. Organizational readiness is the degree of buy-in from the organization including their degree of alignment and participation. Category opportunity is discovering the potential each category holds (O'Brien, 2012). Organizational structure and these factors mentioned above will determine the range of benefits provided from spend management and CM. To further illustrate the comparison between strategic sourcing and category management, Table 2 describes these two theories based on six components: scope, goal, intelligence required, strategy, tools, and outcome. In the table, strategic sourcing is only a tool within CM (Shields, 2016).

Table 2. Category Management and Strategic Sourcing Comparison. Adapted from Shields (2016).

Category Management and Strategic Sourcing Comparison		
Component	**Category Management**	**Strategic Sourcing**
Scope	Total organizational/mission spend	Spend within a specific sourcing area
Goal	Maximize organizational and mission value of managed categories of spending, including total cost of ownership, risk operational performance, innovation, and life cycle management, etc.	Reduce costs, manage total cost of ownership improve outcomes for a good or service for specific sourcing event(s)
Intelligence Required	Understand spend with multiple suppliers across markets for entire categories	Understand spend within a single sourcing area and suppliers and market related to the sourcing event(s)
Strategy	Organization-wide category strategy derived from procurement strategy derived from organizational or government-wide mission strategy	Strategy of the appropriate category of expenditure
Tools	Demand and contract management; supplier relation management; strategic sourcing; contract optimization; supplier negotiation	Demand aggregation and disaggregation; new contracts creation; contract modification; low-cost and low-value goods or services transactional contracting
Outcome	Validated savings and increased organizational and mission value from third party spend within and across categories	Reduced prices, improved terms, increased value, and outcomes for specific good or service

4. United States Special Operations Command Strategy to Implement Category Management

Although the separate services have taken the initiative to implement CM, SOCOM is only in the preliminary stages of CM execution. SOCOM initially identified key areas of spend for which it would like to assign category managers for operational effectiveness. It has achieved a limited implementation of CM and has executed CM at a small-scale level in some specialized areas which have been classified as "SECRET" and were not accessible to personnel without the proper clearance. SOCOM has been utilizing strategic and Best in Class (BIC) contracts. The General Services Administration (GSA) defines *BIC solutions* as government-wide solutions that:

> Allows acquisition experts to take advantage of pre-vetted, governmentwide contract solutions; Supports a governmentwide migration to solutions that are mature and market-proven; Assists in the optimization of spend, within the governmentwide category management framework; and Increases the transactional data available for agency level and governmentwide analysis of buying behavior. (GSA, 2020, para. 1)

The contracts listed in Table 3 are SOCOM's current strategic contract vehicles. The contracts listed in Table 4 are BIC solutions that SOCOM is utilizing.

Table 3. SOCOM's Current Strategic Contract Vehicles Source: C. Bright (personal communication, 2020).

Contract Name	Categories of Spend	Predominant PSC Description
1. Preservation of the Force and Family (POTFF) Single Award IDIQ Contract	Medical	Q999 - MEDICAL- OTHER
2. USSOCOM Enterprise Training and Exercise Program Single Award IDIQ Contract	Training	R499 - SUPPORT-PROFESSIONAL: OTHER
3. SOF Core Support Multiple Award IDIQ Contract	Knowledge Based Services	R499 - SUPPORT-PROFESSIONAL: OTHER
4. Special Operations Forces Support Activity, Global Logistics Support Services Single Award IDIQ Contract	Logistics	R706 - SUPPORT-MANAGEMENT: LOGISTICS SUPPORT
5. Enterprise Operations and Maintenance task order via GSA Alliant	Information Technology (IT)	D307 - IT AND TELECOM-IT STRATEGY AND ARCHITECTURE
6. Microsoft and Azure Cloud Enterprise Licensing Agreement	IT	7030 - INFORMATION TECHNOLOGY SOFTWARE
7. GSA Dell SOCOM Blanket Purchasing Agreement (BPA)	IT	7035 - INFORMATION TECHNOLOGY SUPPORT EQUIPMENT
8. SOCOM Wide Mission Support Multiple Award IDIQ Contract	Knowledge Based Services	R499 - SUPPORT-PROFESSIONAL: OTHER

Table 4. SOCOM's Current BIC Solutions Source: C. Bright (personal communication, 2020).

Contract Name	Categories of Spend	Predominant PSC Description
1. GSA OASIS	Knowledge Based Services	Not Applicable due to multiple orders
2. GSA Alliant	IT	D307 - IT AND TELECOM- IT STRATEGY AND ARCHITECTURE
3. Army Information Technology Enterprise Solutions Hardware and Services Contracts	IT	D307 - IT AND TELECOM- IT STRATEGY AND ARCHITECTURE
4. NASA SEWP 5 GWAC	IT	D307 - IT AND TELECOM- IT STRATEGY AND ARCHITECTURE
5. DOD Enterprise Software Initiative	IT	7035 - INFORMATION TECHNOLOGY SUPPORT EQUIPMENT

The use of the strategic contract vehicles and solutions helps organizations reduce unaligned spend (OMB, 2019). In an effort to comply with the OMB's guidance, SOCOM identified a need for a tailored CM framework.

B. KEY CONSIDERATIONS OF CATEGORY MANAGEMENT

There are key considerations for implementation and adoption of CM in an enterprise. We highlight spend analysis, organizational alignment and leadership, expertise and capability, business intelligence and market intelligence, SRM, and frameworks, in the hopes of informing ongoing CM efforts of SOCOM's policymakers and senior leadership. A spend analysis provides a comprehensive understanding of an organization's spending patterns and helps identify targets of opportunity. Organizational alignment and leadership play a critical role in successful change implementations. An organizational study specifically links leadership competencies to activities involved in implementing new concepts or programs and aligning them into the organization's overall mission (Higgs & Rowland, 2011). Successful change implementation relates to leadership competencies (Higgs & Rowland, 2011). The report *Category Management: A Concept of Operations (CONOPS) for Improving Costs at the Air Force Installation* (Keller et al., 2014) presented

a need for personnel capabilities to implement CM. For example, performance by a portfolio manager will require a capability for and understanding of strategic cost management, not only expertise within category domains (Keller et al., 2014).

Business intelligence and market intelligence also play a key role in implementation of a CM program. O'Brien (2019) identified the principles of CM to be a strategic approach to sourcing, strong market understanding, and management. "Category Management, and indeed any sort of strategic purchasing intervention, is successful when it is embraced as an organization-wide philosophy" (p. 46). Three dimensions of strong market understanding and managing are "understanding the current marketplace, determining the optimum marketplace to source from, and optimizing organization's power in the marketplace" (pp. 52–54). Handfield (2010) spoke about the importance of supply market intelligence (SMI) in his article "Supply Market Intelligence: Think Differently, Gain an Edge." Handfield stated that "organizations need to develop deep market intelligence that will provide insights into core elements of market trends, commodity pricing, global capacity, and government and regulatory changes that could have an impact on global sourcing" (p. 42). Handfield (2010) concluded that SMI will allow organizations the ability to achieve superior market performance, make informed strategic decisions, and monitor supply risk.

One foundation that O'Brien (2019) mentioned is driving change. "Good strategic purchasing is more about change management than anything else" (p. 55). This effort should be driven by the multi-functional team (MFT). O'Brien also stated that change management "is something that purchasing can rarely do alone; it requires the support, cooperation and active participation of other parts of the organization" (p. 55). The organization must have the ability to drive change; however, there are many barriers to change. Resistance to change, lack of involvement, lack of executive support, and inadequate resources are different types of barriers organizations can face when trying to properly execute and implement CM. These barriers cannot be overcome without effective change management. Lastly, frameworks play an essential role for CM implementation. Several sources discuss the importance of frameworks and how to implement them effectively (Adom et al., 2018; Schmidt et al., 2004). As an example, the USAF as an enterprise initially adopted a six-step CM framework for execution, "1. Define, 2. Analyze,

3. Strategize, 4. Prioritize, 5. Implement, and 6. Improve," (Keller et al., 2014, p. 30) and eventually implemented a more refined four-phase CM operating model, "1. Plan, 2. Analyze, 3. Execute, and 4. Performance Management," (USAF CM PSO, 2020a, p. 12) across the enterprise. These key considerations in implementing CM are discussed in more detail in the following sections.

1. Spend Analysis

A spend analysis "is a tool that provides knowledge about who are the buyers, who are suppliers, how much is being spent for what goods and services and where are the opportunities to leverage buying, save money, and improve performance" (GAO, 2004, p. 2). The idea of spend analysis "is to identify aggregate spend associated with each supplier, and then use intelligent segmentation techniques to retain some suppliers and consolidate/eliminate others that are not deemed to be strategically important" (Pandit & Marmanis, 2008, p. 11). The authors state:

> Spend analysis organizes procurement information via supplier hierarchies, commodity alignment, and spend amount, in order to ascertain true category spend, identify strategic sourcing opportunities through demand aggregation and supplier rationalization, [and] identify expense reduction through increased compliance—in the form of vendor rebates, maverick spend, contract compliance, and budget variance. (Pandit & Marmanis, 2008, p. 5)

An organization can obtain various benefits when conducting a spend analysis that can lead to opportunities for savings. The results from a spend analysis can enable organizations to identify strategic sourcing opportunities necessary to "drive greater efficiency in procurement" as stated in the National Defense Strategy (NDS) (DOD, 2018). According to Pandit and Marmanis (2008), specific benefits include:

> (1) comprehensive visibility into all corporate spend (2) quality and depth of analysis that usually improves dramatically over time (3) reduction of off-contract spend to leverage volume savings (4) rapid identification and prioritization of the largest savings opportunities and (5) incremental savings through supplier consolidation and volume purchasing. (p. 27)

The value a spend analysis delivers is directly tied to how many opportunities for savings are uncovered. Pandit and Marmanis (2008) grouped opportunities into two distinct

buckets—aggregate spend-level opportunities and transactional-level opportunities as illustrated in Table 5.

Table 5. Spend Analysis Opportunities for Savings. Adapted from Pandit and Marmanis (2008).

Level	Opportunities
Spend Level	• Supplier Rationalization • Demand Aggregation (or Disaggregation) • Bypass of the Preferred Purchasing Process • Diversity Spend Compliance • Supplier Performance
Transactional Level	• Contractual Term Opportunities • Payment Term Opportunities • Invoice Processing Opportunities

Spend-level opportunities are uncovered by viewing the aggregate amounts of spend. Transactional-level opportunities require transaction-level visibility and intelligence to identify. A Research and Development (RAND) study stated that "opportunities for savings result from the potential for increased leverage, economies of scale or scope, and reduced transaction costs" (Moore et al., 2002, p. 11).

The output of the spend analysis "is a complete, documented understanding of the organization's past and future purchases for supplies and services, segregated by users and suppliers" (Rendon, 2005, p. 10). Once an agency or organization is equipped with the results of a spend analysis, they are in the position to implement CM, take advantage of cost-saving opportunities, and make data-driven business decisions.

There are several limitations when performing a spend analysis. Specifically, "agencies can face challenges in obtaining and analyzing reliable and detailed data on spending as well as securing expertise, leadership support, and developing metrics" (GAO, 2013, p. 5). As with any type of analysis, the results (outputs) are only as good as the data used (inputs). The starting point for a good spend analysis is having good data on current spending. Unfortunately, numerous data sources, incomplete data, and compatibility problems arise and lead to unreliable data. Expertise is another known limitation. The GAO reported that "officials at several agencies noted that the lack of trained acquisition

personnel made it difficult to conduct an opportunity analysis and develop an informed sourcing strategy" (GAO, 2013, p. 6). Leadership commitment is noted to be another limitation to the implementation of a spend analysis. The GAO reported that effective application of strategic sourcing initiatives in the commercial sector supported commitment of leadership as being critical to the success of its spend analysis program (GAO, 2013).

2. Organizational Alignment and Leadership

Aligning CM function to the overall mission of an organization and leadership are another key consideration. The USAF published their strategic alignment and intent through a documented charter. In the USAF CM program charter, SAF/MG aligned the USAF CM program objectives, principles, and process to strategies at both the USAF level and DOD level. The USAF employs CM as an enabler for the 2018 NDS, 2018 National Defense Business Operations Plan (NDBOP), PMA, 2019–2021 Air Force Business Operations Plan (AFBOP), and the Air Force Infrastructure Investment Strategy (USAF CM PSO, 2020b).

An organizational study shows organizational alignment and managing change require specific leadership competencies. The following five broad areas of leadership competencies are linked to successful organizational alignment and change implementation: "(1) creating the case for change, (2) creating structural change, (3) engaging others in the whole change process, (4) implementing and sustaining changes; and lastly, (5) facilitating and developing capabilities" (Higgs & Rowland, 2011, pp. 311–312).

Leadership across the DOD has created cases for a change to implement CM. Effective creation of cases for change pertains to leaders who successfully engage others in identifying the business need for change (Higgs & Rowland, 2011). The USAF published the purpose of implementing CM as a framework that shifts the paradigm from budget execution to strategic cost management, improved mission value and lower total cost of ownership (USAF CM Program Charter, 2020). The director of contracting for Air Force Materiel Command (AFMC) pleaded the case that the USAF must evolve CM to

achieve greater results from strategic sourcing initiatives during DOD Small Business Week (Bullock, 2017). The AFICC has been executing strategic sourcing for several years, but organizational and cultural barriers have limited its success (Bullock, 2017). Another leader within the DOD, spoke at the 2019 Federal Computer Week in Washington, DC, about transitioning to CM:

> People program IT spend, and then the real world happens, and they spend IT. So, we're going to see what was the plan, what was the actual expenditure patterns based on expenditure data and dig in on where we can make those greater savings. (Williams, 2019, para. 6)

CM can help in taking on a "no new money" approach when it comes to information technology (Williams, 2019).

DOD leaders have also created structural changes for implementing CM. Creating structural change means leadership must ensure that the change is rooted from a deep understanding of the issues and demonstrated with a reliable set of processes and tools (Higgs & Rowland, 2011). Before the USAF transitioned CM changes across its enterprise, AFICC leaders initially used a framework or a structure for implementation in support of the USAF installations. The structure discussed the current state of the USAF installation-support supply management for purchased goods and services, described the CM concept, listed organization responsibilities, discussed risks and challenges, and made recommendations for implementation (Keller et al., 2014). The change was based on a deep understanding of a supply management gap by using spend analysis tools and data to highlight limitations of initial strategic sourcing efforts. Exemplary limitations for CM to improve included the need for assignment of responsibility to owners of spend categories in managing enterprise-wide category costs, shaping category consumption, and improving costs associated with their categories (Keller et al., 2014).

Leaders have engaged others in the entire CM process. Though SAF/MG acts as the top accountable official for the implementation of the USAF CM program, there are other units and organization that supports and helps drive the adoption of CM principles and process to its enterprise. The AFICC Enterprise Solutions Directorate (AFICC/KAB) is chartered by SAF/MG as the USAF CM PSO (USAF CM PSO, 2020b). AFICC/KAB provides CM subject matter expertise to guide the execution and implementation of the

USAF CM program. Other CM program and execution support includes the support of the Assistant Secretary of the Air Force for Acquisition, Technology and Logistics (SAF/AQC), who supports the USAF CMAO in governance and reporting by:

> (a) Providing contracting advice and governance to support the CMAO in their role as Air Force representative to the OMB CMLC and OSD
> (b) Serving as advisor to the quarterly CMC and support assigned Category Managers as needed to execute category initiatives
> (c) Supporting the development, consolidation, and submission of Air Force SUM, BIC reports and other key performance metrics to OSD and the OMB
> (d) Developing/reviewing mandatory-use policies for contract vehicles/solutions. (USAF CM PSO, 2020b, p. 14)

AFICC has also engaged both their Enterprise Sourcing Squadrons (ESS) and the Air Force Sustainment Center Contracting (AFSC/PZ) to support the USAF category managers and their teams in executing their responsibilities through conducting opportunity assessments, CIRs, Category Execution Plans (CEP) and executing acquisitions solutions across an assigned category (USAF CM PSO, 2020b). Table 6 displays the categories designated to each of the ESS's and AFSC/PZ as support to the USAF CM program.

Table 6. Designation of Categories as Support to the USAF CM Program. Adapted from the Air Force Category Management Program Support Office (2020b).

Category Designation to Support USAF Category Managers	
Category Name	**Unit**
Category 1 – Information Technology	771st Enterprise Sourcing Squadron
Category 2 – Professional Services	771st Enterprise Sourcing Squadron
Category 3 – Security and Protection	771st Enterprise Sourcing Squadron
Category 4 – Facilities and Construction	772nd Enterprise Sourcing Squadron
Category 5 – Industrial Products and Services	AFSC/PZI
Category 6 – Office Management	771st Enterprise Sourcing Squadron
Category 7 – Transportation and Logistics Services	763rd Enterprise Sourcing Squadron
Category 9 – Human Capital	338th Enterprise Sourcing Squadron
Category 10 – Medical	773rd Enterprise Sourcing Squadron

The leadership role of implementing and sustaining change is essential for a successful change implementation. Pandit and Marmanis (2008) suggested leading from the top and securing executive support as critical factors in delivering successful program implementations. Figure 2 illustrates SAF/MG's leadership support to CM.

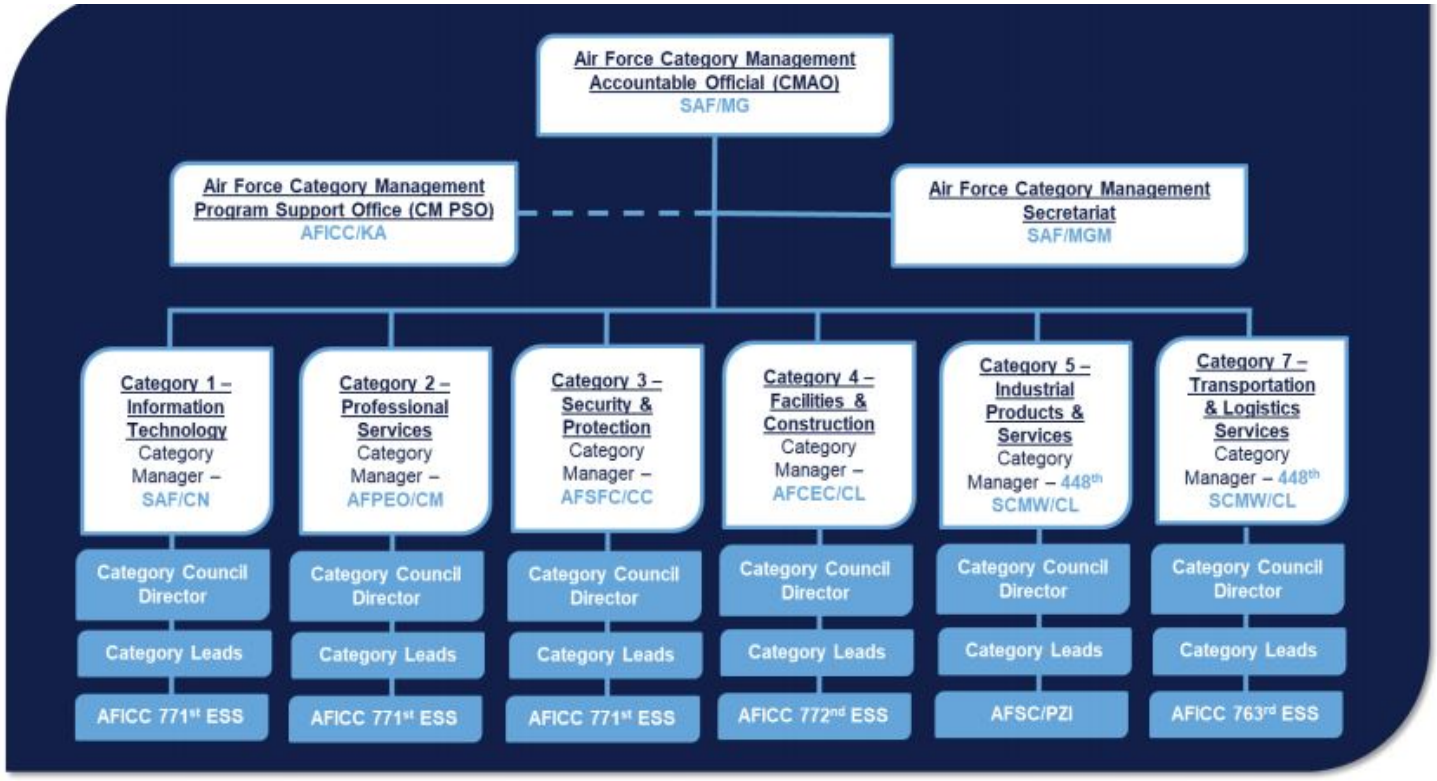

Figure 2. SAF/MG Support to CM. Source: Air Force Category Management Program Support Office (2020b).

SAF/MG as the Air Force Category Management Accountant Official (CMAO) leads from the top by directing, monitoring, and reporting progress of CM implementation and category improvement across applicable portfolio groups and chairs the USAF quarterly Category Management Council (CMC). According to Steve Brady from the USAF CM PSO, it is essential to identify early adopters for CM who are credible, who have CM expertise, who can provide strategic vision, and control naysayers (S. Brady, personal communication, 2020). Furthermore, he expressed that the appointment of SAF/MG as the top CM official is strategic as this position is outside the acquisition function and can cut through all the other functions in the USAF.

Finally, the AFICC leadership has facilitated and developed capabilities in implementing CM, which is another example of leadership competency in successful change implementation. AFICC has developed performance measures capabilities through metrics that evolve over time. These metrics measure performance and are reportable at the federal level. AFICC also developed its capabilities for business intelligence through creating the BICC to support its portfolio managers in developing CM initiatives and analysis.

3. Expertise and Capability

The auditability theory states that for an organization to be successful it needs to have competent people, capable processes, and effective internal controls (Rendon, J. & Rendon, R., 2020). The same is true for the successful implementation of CM. CM professionals must have a detailed understanding of their roles and responsibilities. Air Force Installation & Mission Support Center (AFIMSC) developed Table 7, which lists the key stakeholders in CM and their roles and responsibilities:

Table 7. USAF Key CM Roles and Responsibilities. Adapted from the Air Force Category Management Program Support Office (2019).

Category Management Roles and Responsibilities	
Role	**Responsibilities**
Air Force Category Management Accountable Official (CMAO)	-Develops/maintains agency CM program; appoints agency Category Managers - Reports CM progress to OMB
Air Force Category Manager	- Executes CM improvement strategies, and initiatives - Authority and responsibility for strategic cost management; shapes consumption and standard service levels - Monitors execution category improvement strategies - Resources/oversees CIR and Category Execution Teams
Air Force Category Council Director	- Leads Category Council activities on a daily basis - Provides CM support to the Category Manager and Category Leads; meets with CMAO on monthly basis to review status of CM program
Role	**Responsibilities**
Air Force Category Lead	- Develops and analyzes CSP inputs/findings - Monitors execution category improvement strategies - Evaluates/reports success of the level 2 category spend - Resources/oversees CIRTs and CETs
Air Force Category Management Secretariat	- Administers AF CM Program activities & manages CM Governance - Facilitates AF CM lesson sharing/info sharing AF wide - Enforces timeline adherence for all CMAO taskings
Air Force Category Management Program Support Office (USAF CM PSO)	- Develops and maintains AF CM tools, templates, guides - Facilitates data analysis and benchmarking - Facilitates performance measurement and reporting - Develops and facilitates effective CM training & education

Each of the roles listed in Table 7 requires competency that can be acquired through the USAF CM PSO, a centralized support to the USAF CM personnel. This office provides analytic support such as tools, templates, training, spend reports, industry reports, and a data repository. Another resource to acquire expertise is through the DAU trainings, such as the "Intro to Air Force CM" course, which consists of "the history of CM in the Federal

government and the USAF, the USAF 4 principles of CM, Roles and Responsibilities, and the 6 step CM process" (DAU, 2020). Table 8 displays several in-house trainings provided by AFICC for USAF CM personnel as part of its training program:

Table 8. USAF Category Management Training Catalog. Adapted from the Air Force Category Management Program Support Office (2020a).

USAF Category Management Training Course Catalog				
Course Name	**Type**	**Objective**	**Audience**	**Prerequisite**
Introduction to the AF Category Management Program	Instructor Led or On-line	This course is designed to provide an understanding of the AF Category Management Program history, principles, key participants and 6-step execution process.	All USAF Category Management Personnel	None
Introduction to the AF Category Management Program (SES Version)	Instructor Led	This course is designed to provide an understanding of the AF Category Management Program history, principles, key participants and 6-step execution process to AF senior leadersexecutives.	USAF Senior Leaders	None
Introduction to the USAF Category Management Process	Instructor Led	This course is designed to provide an understanding of the 6-step AF Category Management Execution Process.	All USAF Category Management Personnel	Introduction to AF Category Management Program course.
Air Force Category Manager Training	Instructor Led	This course is designed to provide an understanding of the AF Category Manager's role and responsibilities in the AF Category Management Program.	AF Category Managers	Introduction to AF Category Management Program (SES version) course.
Air Force Category Council Director Training	Instructor Led	This course is designed to provide an understanding of the AF Category Council Director's role and responsibilities in the AF Category Management Program.	AF Category Council Directors	(1) Introduction to the AF Category Management Program course and (2) Introduction to the AF Category Management Process course.
Air Force Category Lead Training	Instructor Led	This course is designed to provide an understanding of the AF Category Lead's role and responsibilities in the AF Category Management Program.	AF Category Leads	(1) Introduction to the AF Category Management Program course and (2) Introduction to the AF Category Management Process course.

USAF Category Management Training Course Catalog				
Course Name	**Type**	**Objective**	**Audience**	**Prerequisite**
Category Intelligence Team Training	Instructor Led (Workshop)	This course is designed to provide all Category Intelligence Team members with an understanding of the Category Intelligence Report process and specific responsibilities of each team member.	Assigned AF Category Intelligence Team Members	(1) Introduction to the AF Category Management Program course and (2) Introduction to the AF Category Management Process course.
Category Management and Strategic Sourcing Integration	Instructor Led	This course is designed to provide an understanding of the relationship and integration of Strategic Sourcing within the AF Category Management Program.	All assigned AF Strategic Sourcing personnel	(1) Introduction to the AF Category Management Program course and (2) Introduction to the AF Category Management Process course.

4. Business Intelligence and Market Intelligence

Business intelligence is an essential tool for CM decision-making processes. Business intelligence "is the product of collecting, cleansing, benchmarking, and analyzing data to be used by category managers to identify recommendations to improve category performance and drive strategic cost management results" (USAF CM PSO, 2020a, p. 7). Business intelligence as a function "is promising to turn data into knowledge and help managers survive data tsunami and eventually succeed in decision making" (Niu et al., 2013, p. 835). Deputy Director of then-AFICA's (now AFICC) Enterprise Sourcing Division Maj. John Sharkey stated, "We want to make sure our acquisition professionals are equipped with the best information and data out there, provide it in the most comprehensive form possible, and make it ultra-convenient for them to access" (Ripple, 2017, para. 3). In an era of advanced information technology, industries practicing CM have started to utilize business intelligence platforms such as Tableau, PowerBL, and Qlik to facilitate the interpretation of spend data. AFICC developed Figure 3 to illustrate its approach to developing business intelligence.

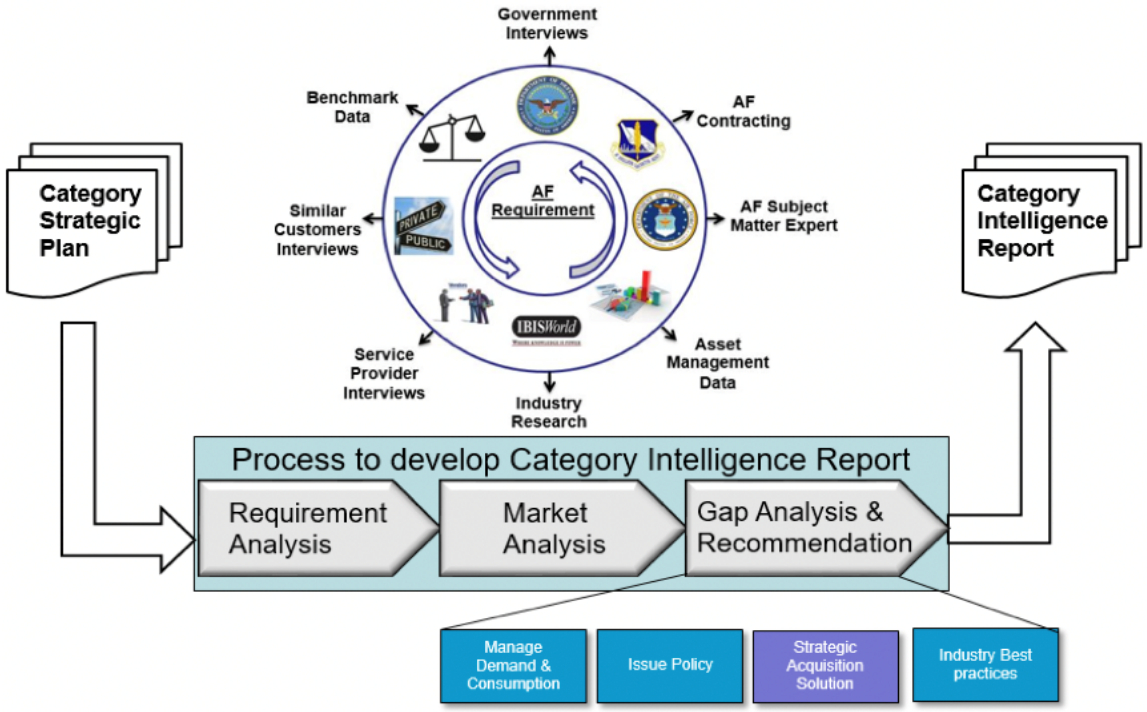

Figure 3. Developing Business Intelligence. Source: Air Force Category Management Program Support Office (2019).

As displayed, Figure 3 consists of all the resources available to acquire business intelligence, both internal and external to the organization. Initial planning establishes goals and identifies targets of opportunities, which in turn allows for a comprehensive analysis of what the USAF requires, resulting in actionable business intelligence. (AFICA, 2017). Once gaps in cost and performance have been identified, category managers make data-driven decisions based on the business intelligence via category reports to close those gaps. The GSA also provides direct support in the "development and management of the resources to support CM to include the Acquisition Gateway, dashboards, and other tools to enable efficient analysis of spend under management and market intelligence, such as tools to compare prices paid or labor rates based on relevant criteria, such as years of experience, educational level, and personnel requirements" (OMB, 2019, p. 17). Analytics are a core part of business intelligence. Evelson and colleagues (2008) listed business intelligence analytics into eight categories based on an evaluation of well-known business intelligence tools on the market:

(e) Production/operational reporting for pixel-perfect mass report distribution.
(f) Ad hoc query tools provide a quick answer to a business question.
(g) Online Analytical Process (OLAP) tools, when business questions are more about "whys" than "whats".
(h) Dashboards as an interactive, visual user interface – not a reporting or analytical tool by itself.
(i) Business activity monitoring (BAM) to report on real-time data and process information streams.
(j) Predictive modeling answers questions about what's likely to happen next.
(k) Business intelligence workspaces enable true end user self-service.
(l) Guided business intelligence search tools support free form ad hoc queries and analysis. (pp. 2–5)

To reiterate, business intelligence is geared to how an organization interprets and acts on internal (mostly) data to make data-driven business decisions.

Business intelligence is not to be confused with market intelligence, which is described as a more holistic view of the industry and the organization's place within it. Handfield (2010) expressed the much-needed integration of "market intelligence into operational decision, including budgets, profit objectives, market pricing, technology insights, and global expansion" (p. 43), as most organizations experience shortfalls in this department. Category managers who looks for entry into new sourcing activities for a specific category exemplify the application of market intelligence in CM (Handfield, 2010). Additionally, category managers need up-to-date market information, which includes spend data analysis, market analysis, pricing, competition, and other forms of data collection (Handfield, 2010).

Category managers at well-known private industries depend on supplier market intelligence as a critical foundation of sourcing strategy which includes activities such as data collection, synthesis, and analysis (Handfield, 2010). This industry practice is nonexistent in the DOD as the category managers are expected to balance their daily activities as well as perform market intelligence functions to make strategic decisions.

5. Supplier Relationship Management

SRM has different definitions depending on the use from the organization but encompasses determining spend categories that are important, distinguishing what the organization needs from its supply base in order to accomplish its strategic goals, and determining how it will accomplish those goals through intervention. O'Brien (2019) defined SRM as follows:

> The overarching strategic approach to determine and implement different supplier-based interventions, including the development of collaborative relationships with the critical few suppliers who can make the greatest difference; prioritized against available resources, appropriate across an entire supply base to maximize value to the organization, reduce supply chain risk and enable the organization to achieve its goals and enhance value to the end customer. (p. 337)

Monczka et al. (2015) provided a simpler definition of SRM as the "end-to-end process of managing a supplier through the entire sourcing life cycle, which includes first identifying the abilities of a particular company with regard to performing a service for the internal customer, completing a sourcing event, negotiating a contract, executing an order, and determining payment" (p. 49). In "Supplier Relationship Management as a Macro Business Process," SRM is viewed as a "strategic, process-oriented, cross-functional, and value-creating for buyer and seller, and a means of achieving superior financial performance" (Lambert & Schwieterman, 2012, p. 337). A holistic view states that SRM "drives supplier behavior, encompasses the relationship between two enterprises, and enables a company to leverage its size by coordinating across divisions, functions, and hierarchies" (Easton et al., 2014, p. 11). These various definitions provided for SRM support its importance within the CM framework.

Supplier segmentation is a core foundation of SRM that helps determine what kind of intervention is needed. O'Brien mentions three different classifications of suppliers: transactional, important, and strategic. Transactional suppliers require no special intervention beyond the immediate transaction. Important suppliers are suppliers who require some management or intervention because these suppliers provide a benefit to an organization. Strategic suppliers are suppliers who are critical or provide some type of strategic importance to organizations because they can be a business risk or they can

provide long-term value (O'Brien, 2019). Table 9 displays the number of suppliers per classification.

Table 9. Number of Suppliers per Classification. Adapted from O'Brien (2019).

Supplier Classification	Number of Suppliers
Strategic Suppliers	A handful
Important Suppliers	10 - 100
Transactional Suppliers	101 -10,000

Risk, difficulty, current importance, alignment, and future importance are different types of criteria that can help determine supplier importance. There can be risk of supply failure, loss of competitive advantage, or delay of receiving product or service. Difficulty includes the ability to switch suppliers for complex or proprietary goods and services. Current importance looks at contractual commitments or established relationships. Alignment focuses on the organizations strategic goals, policies, or ethics. Lastly, future importance concentrates on future spend or plans, supplier innovation and future direction (Obrien, 2019). "Once we are clear about the degree and nature of importance for the suppliers of our category, we can identify how the suppliers should be managed and the appropriate interventions needed" (O'Brien, 2019, p. 350). Organizations can use the criteria mentioned in the previous section to determine if and why they need a relationship with their suppliers, therefore leading to determining what intervention is required.

The "Orchestra of SRM" is discussed in *Category Management in Purchasing* and is composed of five different interventions: (1) supplier management, (2) supplier performance measurement, (3) supplier improvement and development, (4) supply chain management, and (5) strategic collaborative relationships:

> Each component of the orchestra of SRM—the areas of focus, the different approaches and interventions—must play as and when needed according to what is appropriate for the circumstances, the current environment and the point in time with the conductor providing a governance framework that guides how the various interventions come in or drop back. (O'Brien, 2019, p. 341)

Day-to-day management, interaction, relationship management, contract management, performance management, review, and coordination of improvement initiatives are components of supplier management and are for the most important suppliers. Supplier performance measurement measures supplier performance and collaborates with suppliers for improvements. The efforts to drive reactive improvements or proactive developments align under supplier improvement and development. Table 10 presents the reactive and proactive reasons for intervention with suppliers.

Table 10. Reasons for Supplier Intervention. Adapted from O'Brien (2019, p. 360).

Supplier Improvement (Reactive)	Supplier Development (Proactive)
Fix a supplier-related problem	Develop capability
Prevent a problem reoccurring	Innovate
Reduce or eliminate a known risk	Develop a new product or service
Reduce costs	Create new differentiator
Improve process effectiveness or efficiency	Enter new markets
Improve performance	Release new value that benefit both parties

After organizations determine what type of supplier improvement is required, they can plan and implement a strategy to achieve desired results. Supply chain management is the approach to analyze the entire supply chain to ensure flow of information, address risk, and realize new opportunities beyond the immediate suppliers. Lastly, strategic collaborative relationship is only considered with critical few suppliers who are strategically important and who can add the most value to the organization. These SRM components do not stand alone but need to be integrated to be effective.

O'Brien (2019) noted that SRM demands an organization-wide philosophy shift like CM and cannot exist in a single step. "Just as for CM, in order for SRM to have a purpose and to contribute effectively to organizational success it requires wider terms of reference and cross-functional participation" (p. 337). He also discussed the benefits of executing SRM properly, including creating a competitive advantage, enhancing growth and brand development, reducing costs, improving efficiency and effectiveness, and minimizing supply-side risk.

6. Use of Frameworks

Establishing frameworks is an essential consideration when implementing a function like CM in an organization. For example, a change implementation framework helps implementers address key transition issues (Kline, 2007). Frameworks can also be used in assessing an organization's performance in a specific function. The GAO developed the *Framework for Assessing Acquisition Function at Federal Agencies* to assess the strengths and weaknesses of the acquisition function, help senior agency executives find management attention areas and allow organizations to see improvement areas within the acquisition function (GAO, 2005). In 2014, the USAF enterprise utilized a conceptual framework for execution during the initial development of its CM program. Figure 4 displays the USAF's initial framework in implementing CM within its enterprise.

Figure 4. USAF's Initial Framework for the Execution of CM. Source: Keller et al. (2014).

As shown in Figure 4, the USAF's creation of the BICC supports business intelligence as the first milestone in the initial CM framework. This framework presented the development of a CM plan within the first milestone. Keller et al. (2014) explained that this plan defines how the category will be strategically managed and lists opportunities for improvement. They also argued that strategies must be developed for each of the improvement initiatives within the management plan as a second milestone. Lastly, the ongoing nature of CM requires continuous measurement and monitoring of category performance as the last milestone (Keller et al., 2014).

To improve and build upon the AFICC's initial framework, the USAF adapted to a more refined and continuous CM four-phase operating model. Figure 5 displays the USAF's current CM operating model, which includes distinct and separate phases: (1) Category Planning; (2) Category Analysis; (3) Strategy Execution; and (4) Performance Management. The operating model was designed to use proactive, repeatable, and data-driven methods that enable strategic cost management, which is the USAF's main objective in implementing CM (USAF CM PSO, 2020b).

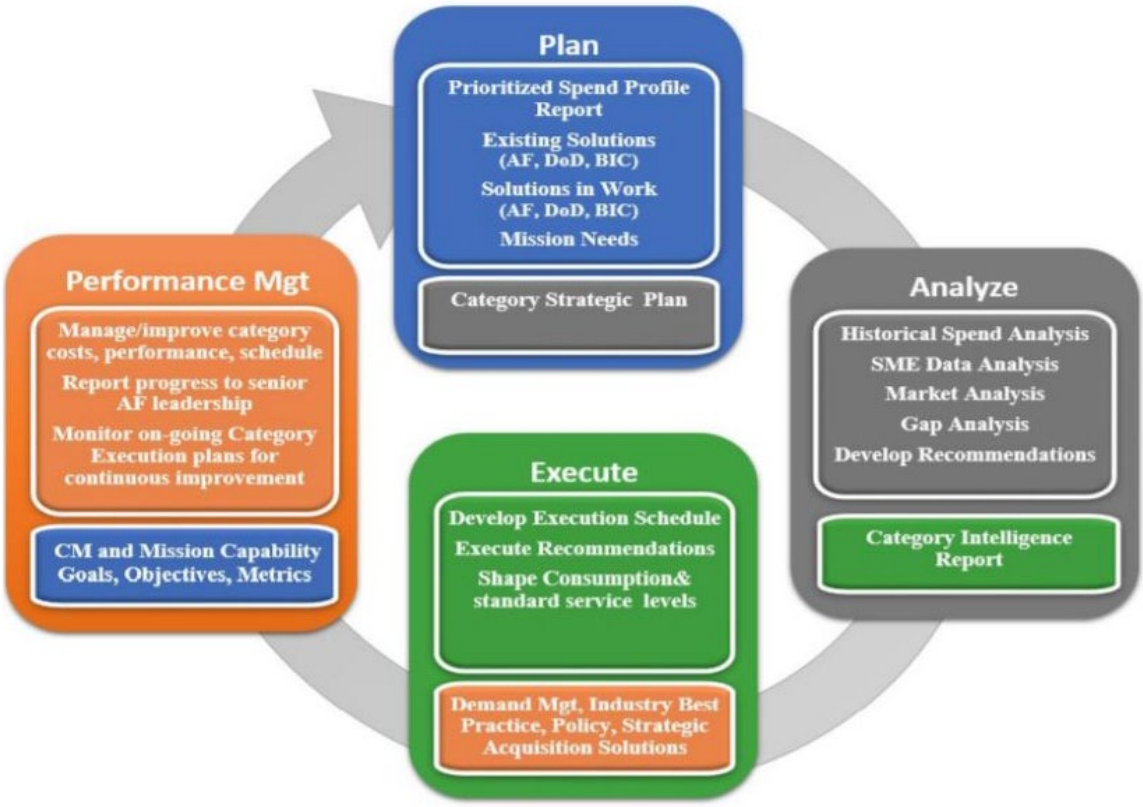

Figure 5. The USAF's Category Management Operating Model. Source: Air Force Category Management Program Support Office (2020a).

C. CONCLUSION

In this chapter, we examined literature from sources pertaining to the background and theories of CM, its application to the DOD, the USAF, and SOCOM enterprise, and the key considerations for successful CM implementation. We substantiated that CM is an effective spend management theory to reduce costs, increase efficiencies and effectiveness,

improve innovation, and boost end-user satisfaction. Chapter III provides a discussion of the methodologies used for this research.

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III. METHODOLOGY

We used a spend analysis and a gap analysis to answer our research questions. Identifying spend is the first step for organizations to pinpoint the categories to which they want to direct their resources (O'Brien, 2019). Conducting a spend analysis for SOCOM provides us with an understanding of how much they are spending per fiscal year, the breakdown of spend for each category, how many contracts were written within the fiscal year, what contracting offices are writing those contracts, and the number of vendors that are available. Our spend analysis paints a picture of where potential opportunities lie to cut costs or obtain more value per taxpayer dollar.

We used a gap analysis as our second methodology. A gap analysis "loosely defines a method for identifying the degree to which a current system satisfies a set of requirements" (Langford, 2007, p. 2). We first analyzed the guidance from the OMB requiring agencies to adopt CM. We then talked to CM experts from the USAF and we evaluated SOCOMs current CM state using the USAF as a benchmark as they have been successful in delivering the five key CM actions required by the OMB. We then tailored a framework to assess a CM function for federal agencies using the GAO's 2005 *Framework for Assessing the Acquisition Function at Federal Agencies* as a guide. We decided to use the GAO framework as a reference because of its credibility in assessing acquisition functions. It was created by consulting the federal government and industry professionals within different domains to "enable high-level, qualitative assessments of the strengths and weaknesses of the acquisition function" (GAO, 2005, p. i) After consulting with academic experts, we developed a CM framework to address key cornerstones, elements, and CSF's. We then sent our tailored framework to experts in the CM field and used their inputs and expertise to finalize a CM framework to assess the current state of SOCOM. Finally, we collaborated with SOCOM to identify the current state of its CM and their desired future states and recorded their responses as positive areas or areas of concerns.

A. SPEND ANALYSIS

The first method used was a spend analysis. As mentioned in the literature section above, conducting a spend analysis equips an organization with valuable spend data

information that can be used to make informed data driven business decisions. We identified a spend analysis as being a key component in implementing CM and a key first step to answering our first research question, *how can SOCOM implement CM to execute at the speed of relevance for operators?* We conducted a spend analysis on FY 2015 – FY 2019 in order to identify areas of high spend that SOCOM can focus on implementing CM. The methodology used to conduct our spend analysis can be replicated on SOCOM's SOF peculiar spend data, which can only be accessed with proper clearances. A spend analysis can be conducted through different approaches. We decided to conduct our spend analysis by following Pandit and Marmanis' Extract, Transform, Load, and analyze (ETLA) approach.

As mentioned earlier, the first step of the ETLA framework is the extract phase. During this step, we extracted contract spend data for FY 2015 – FY 2019 from FPDS-NG only, as this is the system that the federal government uses to report unclassified contract data. It is important to mention that due to the classification of SOF peculiar requirement, we were unable to obtain spend data for the six key focus areas of SOCOM's portfolio: PED, OSINT, ISR, MISO, CYBER, and MFF. No other data sources were used in our analysis. Once the data was obtained, it was converted into a Comma Separated Values (CSV) file and then uploaded it into Excel for analysis.

Once the data was obtained, we performed the second step in the ETLA framework. We transformed the FPDS-NG, which is in XML format, into a Comma Separated Values (CSV) file and then uploaded it into Excel for analysis. The data field we were interested in was the Product Service Code (PSC). This data field was going to be used to align PSCs with GSA's Government-Wide categories. Next, we filtered the data by "level one," "level one category," "level two," and "level two category." In order to assure integrity of the data and mitigate any potential errors or duplicative data, we cleansed all the categories, which resulted in exactly 19 level one categories, as reflected in the GSA CM categories.

Next, we describe how we obtained the results for one fiscal year. Note, the methods discussed below were repeated for all five fiscal years. We wanted to find out (1) the total obligated amount per fiscal year, (2) fiscal year spend by categories, (3) top 20% vendors per contract action compared to the contract type, and (4) category supplier

rationalization. Analyzing total obligated amount per fiscal year, when compared to proceeding or succeeding years, will highlight whether SOCOM's obligation amounts are increasing or decreasing. Analyzing fiscal year spend by categories, when compared to proceeding or succeeding years, will highlight SOCOM's individual categories trends. Analyzing the top 20% vendors per contract action compared to the contract type will provide SOCOM with in-depth knowledge on the types of contracts actions being used with their top suppliers. Lastly, analyzing category supplier rationalization will highlight any categories that are ripe for supplier consolidation.

To determine the total obligated amount per fiscal year, we created a pivot table using two data fields: "level one category" and "obligated amount." Repeating this method for each of the fiscal years will allow us to view an upward or downward trend in obligation amounts for SOCOM.

The next analysis we performed was figuring out fiscal year spend by category. We created another pivot table using the same two data fields: "level one category" and "obligatedamount.." Our focus on this analysis was the percentage each category represented within each of their respective fiscal years. This analysis gave us insight on any trends per individual category and how they changed across the five fiscal years.

To perform our third analysis, we created a pivot table using two data fields: "dunsnumber" and "obligated amount" in order to view contractors next to their respective obligated amounts. Next, we identified the top 20% of contractors. Once we identified the top 20% of contractors, we wanted to figure out the contract action types used by these contractors. Using the same pivot table, we used two data fields: "contractactiontypes" and "dunsnumber," which gave us insight on the types of contract action types were held by the top 20% of contractors.

Lastly, we analyzed category supplier rationalization. We created another pivot table with three data fields: "level one category," "obligatedamount" and "dunsnumber." This resulted in the level one categories with corresponding obligated amounts separated by the number of vendors that supply that category. We will focus our attention on identifying any category that has a fragmented supplier base that be can be consolidated to a few key suppliers.

The third step in the ETLA framework is the load phase. This was achieved concurrently when we extracted the data from FPDS-NG. The raw data came in the form of a zip file, which we extracted as a CSV file and then converted to an Excel file. The process of converting it to an Excel file satisfies the load phase. We identified Excel's pivot table function as having most of the capabilities we required to perform our spend analysis. Additionally, we also used the Tableau software and imported our Excel file into the visualization software to perform category supplier rationalization. The fourth and final step of the ETLA framework is the analyze phase. This phase was briefly discussed in this section but will be discussed more in depth in the results chapter.

B. GAP ANALYSIS

To conduct the gap analysis, we developed a framework to assess SOCOM's current CM state. We conducted multiple interviews with CM experts and personnel at SOCOM. They are listed as:

- Director of Procurement, SOCOM
- Deputy Director of Procurement, SOCOM
- Director of Enterprise Solutions Directorate, AFICC
- Chief, Enterprise Innovation Division, AFICC
- Chief, Category Management Branch, AFICC
- Chief, Business Intelligence Branch, AFICC

Based on our literature review and advice from CM experts, we constructed a framework to assess a CM function for federal agencies. Furthermore, this framework aims to provide a clear understanding of SOCOM's current CM state. It will also help SOCOM senior leadership identify areas of concerns which will require greater management attention and aid them with a plan to implement a sound CM program. The information we attained from interviews with SOCOM provided us the insight we needed to develop two future states of its CM function: an initial desired state and an ideal end state. Specifically, SOCOM envisioned a tailored CM framework for SOF peculiar functions and high areas of spend. The framework we developed can be used by SOCOM to assess where they currently are with implementing CM and their desired future states.

1. Data Collection Process

We conducted many interviews with CM experts within the USAF and then with personnel of SOCOM. The interviews with CM experts helped us refine our framework for assessing a CM function and understand how the USAF has been successful in implementing CM. After we established our framework, we held interviews with SOCOM to understand its current CM state. Our team developed a series of key questions, which were asked via teleconferences and email correspondence. We recorded all interviews with SOCOM and with the CM experts. We conducted most of the interviews over the phone, but we also held video telecommunication conferences. For follow-up questions to our research, we simply sent email correspondence. We reviewed these recordings together and highlighted important best practices, lessons learned, and areas of concern. The results and findings of this data collection can be found in the following chapter.

2. Framework Development

The development of our framework's structure draws from the GAO's framework in assessing high-level acquisition functions, which has also been used in a benchmark study to draw and record best practices and lesson's learned from the implementation of the USAF's Program Executive Office for Combat and Mission Support (Finkenstadt & Peterson, 2012). Similarly, our framework consists of four interconnected cornerstones that our research has shown as important to a sound and effective CM program: (1) organizational alignment and leadership, (2) policies and processes (3) strategic human capital, and (4) data and intelligence management. These cornerstones are the main foundation of the framework, which exist independent of the purpose of the organization and to represent an organization that functions well. This framework presents an assessment approach so each of the cornerstones can stand alone so organizations who want to stand up their own CM program may use this framework and tailor assessments to their organization's specific needs. Using Table 11, readers can see a general overview on how the framework is laid out and can detect which areas can be applied to their specific agency.

To assist a future user of this framework, the identified cornerstones from Table 11 present key foundations of an agency that we deemed essential to implement a CM function or program. We broke down each cornerstone into elements and CSFs. The element and CSFs were developed to assess how well the organization is implementing their respective cornerstones. To achieve an effective, efficient, and accountable element, we identified CSFs. CSFs are broken down into positive areas and areas of concern. A *positive area* increases the chance of successfully achieving desired CM program outcomes. On the other hand, an *area of concern* embodies high risk areas that leadership needs to focus on.

We then developed key questions to ask SOCOM to identify which areas are positive or areas of concern within their current state. The answers that we received from SOCOM through interviews informed us on how well they are doing in addressing each CSF. A *positive area* in its current state signifies a strength or practice that SOCOM is currently doing well to achieve desired CM outcomes while an *area of concern* in its current state represents an opportunity area or possible threat to success in achieving the desired CM outcomes. Furthermore, the responses we got from SOCOM helped us collaborate with them in identifying which elements they want to focus on addressing to develop their initial desired state and ideal future state.

To develop the initial desired state, first, our team ranked the elements in order of priority and identified the elements that SOCOM can implement without a preceding element. Second, we collaborated with CM experts to solidify our element prioritization and identified CSFs needed to implement an initial desired state. Lastly, using our literature and advice from CM experts we developed a future ideal CM state.

Table 11. Framework to Assess a CM Function. Adapted from GAO (2005).

Cornerstones	Elements	Critical Success Factors (*) Positive Area (!) Area of Concern
Organizational Alignment and Leadership	Alignment of CM and Agency's Mission Needs	* Appropriate placement and ownership of CM program * Establishment of a joint CM organizational structure * Establishment of organizational CM principles ! Lack of clear definition of CM's function mission
	Commitment from Leadership	* Clear prioritization of CM by leadership * Effective Top-down Communication ! Lack of leadership buy-in
	Change Management	* Core competencies of leadership to drive change * Identification of early adopters ! Lack of drive to challenge resistance by leadership
Policies and Processes	Strategic Planning	* Establishment of governing body or principal forum for establishing strategic direction * Partnership with internal organizations ! Lack of CM collaboration efforts ! Lack of internal and external reporting procedures
	CM Process Management	* Empowerment of cross-functional teams * Management and engagement of suppliers * Establishment of demand management strategies * Establishment of CM program performance measures ! Lack of monitoring and oversight to achieve CM outcomes ! Lack of CM operating procedures

Cornerstones	Elements	Critical Success Factors (*) Positive Area (!) Area of Concern
Strategic Human Capital	Structural Design of Expertise and Capability	* Establishment of centralized support to category managers and other key personnel through development of skills sets needed and maintenance of program guides, tools, templates, and training * Access by personnel to tools and knowledge to use them (decentralized) * Access by personnel to resources outside the agency to assist with tools and dashboards ! Lack of support to CM personnel when roadblocks emerge in performing their duties ! Lack of resources to properly train personnel
	CM Talent Development	* Establishment of CM training program * Establishment of required time frame for completion of CM training * Identification of clear training objectives with feedback loop capability * Identification of key personnel/audience for specific training requirements * Identification of type of training and modality for personnel * Standardization of training to meet professional certification and education requirements ! Lack of ability to provide feedback from trainees about effectiveness of CM courses ! Low prioritization of CM training
Data and Intelligence Management	Data Integrity	* Ownership of a data management strategy * Ability to extract, cleanse, and organize data * Ability to verify & validate data ! Identification of inaccurate data or poor data sources
	Data Storage and Safety	* Ability to safeguard data ! Accessibility issues exist ! Failure to safeguard data
	Data Analysis	* Access to tools to visualize, analyze, interpret data * Ability to generate BI/MI products * Ability to develop and use BI/MI products to generate CM outcomes * Translation of data into meaningful format ! Inability by agencies to translate MI/BI into discernable acquisition actions and decisions

As shown in Table 11, we constructed the following cornerstones for our framework in assessing CM: (1) organizational alignment and leadership, (2) policies and processes, (3) strategic human capital, and (4) data and intelligence management. We also identified elements within the cornerstones essential to successful CM function, which are dependent upon the CSFs listed. The framework informs the user of whether an organization is meeting the CSFs with two indicators: (*) positive areas and (!) areas of concern.

a. Cornerstone 1—Organizational Alignment and Leadership

Cornerstone 1 of our framework consists of three elements. These elements ensure appropriate placement of the CM function within the organization and that the CM function has dedicated and strong leadership owning the CM program. Leadership with core competencies is essential to attaining and sustaining organizational support. Leadership plays a significant role in facilitating and sustaining change (Higgs & Rowland, 2011).

(1) Element 1

Element 1, titled *Alignment of CM and Agency's Mission Needs*, aims to validate that the agency's CM function allows the organization to meet its overall mission and needs. The CM function needs to be properly aligned within the agency to meet its objectives, mission, and goals. This element identifies the following positive areas (*) and areas of concern (!) as its CSFs:

> (*) *Appropriate placement and ownership of a CM program* – This practice ensures that the CM function has been placed to meet the agency's needs. It also ensures a senior accountable official has been assigned as the owner of the CM function and responsible for the agency's CM program.
>
> (*) *Establishment of a joint CM organizational structure* – The establishment of a CM organizational structure identifies key CM participants and relationships within the agency's CM program with clear and defined roles and responsibilities. Key participants may include but are not limited to CMAO, category managers, category leads, and CM council directors.
>
> (*) *Establishment of organizational CM Principles* – Establishment of an agency's CM principles ensures alignment of the tailored foundational

principles that guides the way an agency performs the CM function with the agency's needs and goals.

(!) *Lack of clear definition of the CM's function mission* – Lack of clear definition of the CM's function mission hinders CM stakeholders to strategically achieve a shared and common mission within the agency. This area of concern ensures an agency has a well-defined CM mission and has goals and strategies that are consistent with the agency's overall mission.

(2) Element 2

Element 2, titled *Commitment from Leadership,* aims to assign committed and strong agency leadership who can set direction and enable all key participants to work towards achieving common goals. This element identifies the following positive areas (*) and areas of concern (!) as its CSFs:

(*) *Clear prioritization of CM by leadership* – This practice will enable agency leaders to prioritize the CM function as an enabler to meet agency's needs and recognize the critical role of CM in accomplishing the agency's mission.

(*) *Effective top-down communication* – This practice facilitates and supports clear lines of communication among all key CM participants and enables leadership to listen to its stakeholders' needs and concerns.

(!) *Lack of leadership buy-in* – Lack of leadership buy-in hinders the adoption of the CM function within an agency.

(3) Element 3

Element 3, titled *Change Management*, aims to address the facilitation and adoption of change and the removal of barriers that block the agency's resistance to change. This element aids agency leadership in the successful change implementation of CM across its agency. This element identifies the following positive areas (*) and areas of concern (!) as its CSFs:

(*) *Core competencies of leadership to drive change* – Leadership competencies help agency leaders create cases for change, engage others in the change process, facilitate and sustain changes caused by the implementation of the CM function.

(*) *Identification of early adopters* – This practice ensures the capturing of early adopters who are credible, willing to embrace change and have CM

expertise. These early adopters act as allies who can support CM as an essential function of the agency, see the need for change and are comfortable with adopting CM. These early adopters are critical in the full adoption of CM within an agency.

(!) *Lack of drive to challenge resistance by leadership* – Agency leaders must plan to overcome resistance and challenges in the adoption of CM.

b. Cornerstone 2—Policies and Processes

Cornerstone 2 of our framework consists of two elements. Policies and processes address the governance structure, activities, and procedures that regulate and guide the method an agency executes the CM function.

(1) Element 1

Element 1, titled *Strategic Planning*, aims to address the identification and management of relationships among all stakeholders involved in the CM process. It also addresses a governing body to devise strategic direction of CM to meet agency needs. This element identifies the following positive areas (*) and areas of concern (!) as its CSFs:

(*) *Establishment of a governing body or principal forum for establishing strategic direction* – This practice ensures the establishment of strategic direction and policies for the implementation of the CM function within the agency. This governing body ensures implementation of agency-level CM strategies and initiatives and reporting of CM outcomes and performance within the agency and up to the federal level.

(*) *Partnership with internal organizations* – This approach ensures engagement of CM internal stakeholders and organizations, including contracting, requiring activities, program management offices and other appropriate participants to help ensure seamless integration and execution of CM processes and operating procedures.

(!) *Lack of CM collaboration efforts* - Lack of collaboration across the CM function results in inefficiency, inflexibility, and inability to share best practices to meet CM goals and objectives.

(!) *Lack of internal and external reporting procedures* – Lack of reporting procedures prevents reporting of performance progress and CM outcomes within the agency and up to the federal level.

(2) Element 2

Element 2, titled *CM Process Management*, aims to ensure incorporation and management of essential CM operations and processes for a successful execution of the agency's CM function. This element identifies the following positive areas (*) and areas of concern (!) as its CSFs:

(*) *Empowerment of cross-functional teams* – CM function utilizes cross-functional teams to ensure seamless integration of CM processes. This approach ensures incentives are in place to motivate teams to meet performance measures and feel empowered to make decisions, communicate when roadblocks emerge, and invest in the team's role towards achieving CM outcomes.

(*) *Management and engagement of suppliers* – This approach ensures establishment of effective SRM as an essential business strategy. This approach also allows employment of rigorous supplier selection to create a strong supplier base and establishment of communication and relationship management system with suppliers.

(*) *Establishment of demand management strategies* - This practice allows incorporation of demand planning and forecasting in order to get a full understanding of the agency's current requirements and allows agencies to have a methodology in estimating demand for goods and services.

(*) *Establishment of CM program performance measures* – This practice allows management of performance to include measurement, monitoring and analysis of the various executed strategies to understand the impact and success of the strategies to achieve CM outcomes. The establishment of performance measures also allows monitoring of progress and maturity of the CM program against established goals, strategies, and objectives.

(!) *Lack of monitoring and oversight to achieve CM outcomes* – Lack of monitoring and oversight to CM processes lead to poor performance, weaknesses, and inefficiencies within the CM processes in achieving desired outcomes.

(!) *Lack of CM operating procedures* – Lack of operating procedures and guides hinder the key CM participants to understand the step-by-step operations and processes for the execution of the agency's CM function.

c. Cornerstone 3—Strategic Human Capital

Cornerstone 3 of our framework consists of two main elements. Strategic human capital encompasses the idea that success of an organization comes from the contributions of their people through their expertise and competencies.

(1) Element 1

Element 1, titled *Structural Design of Expertise and Capability*, focuses on the design of the organization to provide expertise and capabilities and support CM personnel. This support to provide expertise and capability can either be centralized and decentralized. A centralized design such as a centralized support office provides CM support and expertise to key CM personnel and their decentralized offices. A decentralized design allows CM personnel in their respective units to have access to tools and gain expertise on their own. This element identifies the following positive areas (*) and areas of concern (!) as its CSFs:

> (*) Establishment of centralized support to category managers and other key personnel through development of skills sets needed and maintenance of program guides, tools, templates, and training – This practice allows an agency to establish centralized support for the agency's CM personnel to execute their duties and responsibilities through establishing standardized processes and procedures, managing knowledge repository, and providing tools, templates and training.
>
> (*) *Access by personnel to tools and knowledge to use them (decentralized)* – This practice allows decentralized units to develop and support their own CM personnel with training, tools, and knowledge.
>
> (*) *Access by personnel to resources outside the agency to assist with tools and dashboards* – This approach allows agency personnel to have access to CM best practices, lessons learned and other resources from other agencies.
>
> (!) *Lack of support to CM personnel when roadblocks emerge in performing their duties* – Lack of support and guidance when roadblocks emerge hinders CM personnel in the accomplishment of their tasks which adversely affects CM operations and activities.
>
> (!) *Lack of resources to properly train personnel* – Inadequate resources to effectively train personnel hinders an organizations ability to properly equip its personnel in order to meet CM objectives.

(2) Element 2

Element 2, titled *CM Talent Development*, focuses on the training and development of CM in the workforce. This element focuses on commitment to training approaches tailored to meet organizational needs and targeted investments in personnel. This element identifies the following positive areas (*) and areas of concern (!) as its CSFs:

(*) *Establishment of CM training program* – This practice allows an agency to establish a comprehensive training program that can track delivery and effectiveness of CM training.

(*) *Establishment of required time frame for completion of CM training* – This practice ensures training accountability for CM personnel to complete their training on time in accordance with their training plan and requirements.

(*) *Identification of key personnel/audience for specific training requirements* – This practice ensures specific training captures the right audience to enhance training efficiency and avoid duplication of training efforts.

(*) *Identification of training and modality for personnel* - This practice ensures specific training meets specific needs and requirements for each CM personnel.

(*) *Standardization of training to meet professional certification and education requirements* – This allows accomplishment of CM training requirements and objectives to meet and satisfy professional certification and education standards.

(!) *Lack of ability for feedback effectiveness of CM courses* – This area of concern would limit feedback from personnel on how to improve, modify or enhance CM courses and objectives.

(!) *Low prioritization of CM training* – This area of concern leads to the low prioritization of CM training within the organization. Low prioritization of CM training leads to the inability of personnel to properly perform CM objectives.

d. Cornerstone 4—Data and Intelligence Management

Cornerstone 4 of our framework consists of three elements. Data and intelligence management focuses on ensuring proper management, security, and analysis of data to help agency leaders and CM personnel make data-driven business decisions within the CM function.

(1) Element 1

Element 1, titled *Data Integrity*, ensures agencies have data management strategies to ensure accuracy and useability of captured data from different sources. Additionally, it ensures information systems and management reflect data that are complete, organized, timely and reliable. This element identifies the following positive areas (*) and areas of concern (!) as its CSFs:

(*) *Ownership of a data management strategy* – This practice allows agencies to manage relevant and comprehensible data and provide agency with visibility, insight, and easy access to make well-informed decisions.

(*) *Ability to extract, cleanse, and organize data* – This practice allows agencies to easily select, strip errors, organize data into a logical manner such as categories, by fiscal year, etc.

(*) *Ability to verify & validate data* – This practice ensures data reflected in the systems are reliable and can be trusted.

(!) *Identification of inaccurate data or poor data sources* – This area of concern inhibits agencies to rectify inaccurate data from information systems and enhance data input accuracy.

(2) Element 2

Element 2, titled *Data Storage and Safety*, pertains to securing and safeguarding of data to make sure data are protected and data internal controls are established. This element identifies the following positive areas (*) and areas of concern (!) as its CSFs:

(*) *Ability to safeguard data* – This practice ensures agency can control access to information systems and plan data security programs.

(!) *Accessibility issues exist* – This area of concern inhibits CM personnel who do not have proper clearances to access data.

(!) *Failure to safeguard data* – This area of concern encompasses agencies who lack the ability to be proper stewards of data.

(3) Element 3

Element 3, titled *Data Analysis*, ensures analysis of data which can be translated into comprehensible information about agency activities to include market and business intelligence. This element identifies the following positive areas (*) and areas of concern (!) as its CSFs:

(*) *Access to tools to visualize, analyze, interpret data* – This practice allows CM personnel to have access to visualization and other business tools to perform data analysis and interpretation.

(*) *Ability to generate business and market intelligence products* – This practice ensure agencies establish an office or capability to generate or facilitate business and market intelligence products and assist CM personnel in the collection, analysis and interpretation of business and market data.

(*) *Ability to develop and use business intelligence and market intelligence products to generate CM outcomes* – This practice ensures CM personnel has the ability to perform data analysis such as but not limited to, cost-benefit analysis, category intelligence reports, spend analysis, market analysis, SME data analysis, etc.

(*) *Translation of data into meaningful format* – Agencies have mechanisms to accurately translate data into meaningful and understandable information to intended users to drive data driven business decisions.

(!) *Inability by agencies to translate market and business intelligence into discernable acquisition actions and decisions* – Lack of mechanism to translate business and market intelligence into discernable acquisition actions hinders key CM personnel in obtaining information needed to execute key CM actions such as developing enterprise solutions, demand management strategies and vendor management.

C. DATA LIMITATIONS

There were several limitations to our research. The first limitation was that we used spend data only from FPDS-NG. SOCOM also uses a separate database, the Electronic Contracting Information Transfer System (ECITS), in house for Operational Security (OPSEC). This is a limited access system where users report their classified and sensitive contract actions. Classified actions are masked so it is impossible to see pertinent

information, such as who, what, when, and where of the acquisition. Therefore, we decided the data from FPDS-NG for FY 2015 through FY 2019 was the most reliable.

A second limitation of our research was that we used top-level spend data. FPDS-NG does not capture contract line item number (CLIN) level data. Also, we do not have access to the physical contract file nor is it feasible to dive into thousands of actions to support a more in-depth analysis. Thus, we determined it would not be viable to complete a more in-depth analysis in the allotted time.

A third limitation would be the human-error for inputting data. We relied on data that was extracted from CARs into FPDS-NG that was ultimately inputted by acquisition personnel. Errors could include personnel not having the right competencies to input data correctly, coding contract actions incorrectly, or typing numbers incorrectly.

A fourth limitation would be the number of personnel interviewed between SOCOM and AFICC personnel. This is a limitation because the information we received for SOCOM was derived from two personnel who spoke on behalf of SOCOMs enterprise. The interviews we conducted with AFICC were limited to six personnel with CM expertise but were only within the USAF.

D. CONCLUSION

In this chapter, we discussed the methods that we used to answer our research questions. We determined that a spend analysis and gap analysis were the most effective for our research. We presented the methodology used to conduct the spend analysis. We then discussed the steps we took to complete the gap analysis. Lastly, we discussed data limitations of our research. The following chapter presents the results and finding of our analyses with our recommendations.

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IV. RESULTS, FINDINGS, AND RECOMMENDATIONS

The purpose of this chapter is to discuss the results of the spend and gap analysis using the data we collected. The analyzed results of the spend analysis allow us to provide recommendations for SOCOM to consider when implementing CM. We discuss our gap analysis results and recommendations for SOCOM to help bridge the gap between their current CM state and their desired future states. Furthermore, we conclude this chapter by providing best practices and recommendations based on interview results and assessments from our developed CM framework.

A. RESULTS OF THE SPEND ANALYSIS

In this section we discuss the results of the spend analysis we performed on SOCOM's FY15–FY19 spend. We present the results of our spend analysis in the form of charts exported from Microsoft Excel's pivot tables and the Tableau software. The areas we focused on were (1) the total obligated amount per fiscal year, (2) FY spend by categories, (3) Top 20% vendors per contract action compared to the contract type, and (4) category supplier rationalization. Each area of focus will be discussed in depth in the following sections.

1. Total Obligations per Fiscal Year

There has been a constant rise of SOCOM's obligated spend over the last five fiscal years as shown in Figure 6. Between FY15 and FY19, its total obligated spend had a 56.56% increase. SOCOM's total obligated spending rose by an average of 12.03% per year. Total obligated dollars have increased by 12.57% between FY15 and FY16, 2.20% between FY16 and FY17, and 14.67% between FY18 and FY19. This constant rise of SOCOM's obligated dollars signifies an annual increase of SOCOM's contract outlays and informs data users with a broad trend of SOCOM's spending.

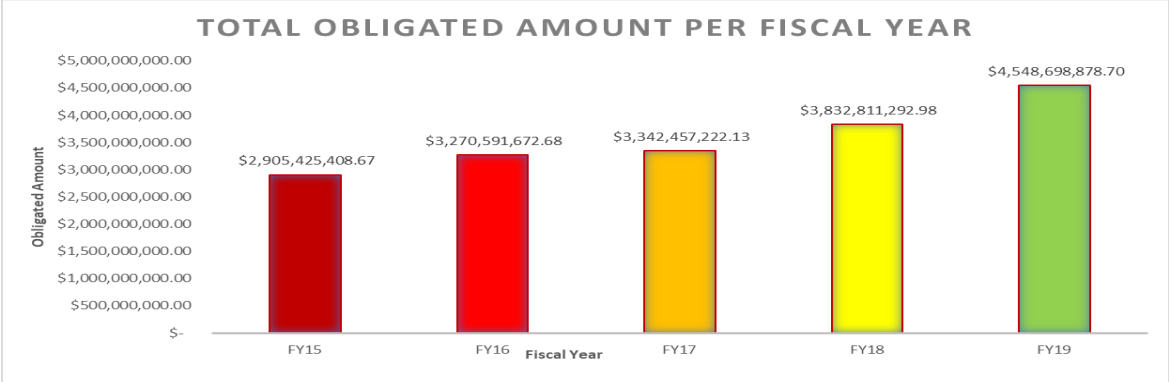

Figure 6. Total Obligated Amount per Fiscal Year. Source: FPDS-NG (2020).

2. Fiscal Year Spending by Categories

We focused this analysis on identifying the top spend categories across the five fiscal years. We omitted the spend categories with values accounting for less than 1% of spend over the five-year period. As discussed in the literature review above, GSA identified 19 common government spend categories. In our analysis, we highlight only nine of those 19 common categories as these categories represented over 90% of the total spend amongst the fiscal years. Upon immediate analysis of Figure 7, we concluded that IT, Transportation and Logistics services, and the Professional Services remained as top categories in SOCOMs spend. Deeper analysis identifies the "Sustainment S&E" category as having a sharp decline since 2018, the "Research & Development" category as having steady funding throughout the years, and the "Aircraft, Ships/Submarines & Land Vehicles" category as having a constant increase in spend since FY15. Categories that increase and decrease in obligations could be the result of a change in mission objectives needs. This analysis provides SOCOM leadership with actionable data on its spending patterns for categories experiencing high spend and increasing spend patterns, by shifting additional resources to these categories. Additionally, these spending patterns informs decision makers at SOCOM with a more strategic approach in achieving CM priorities such as improving buying power and cost performance specific to these categories.

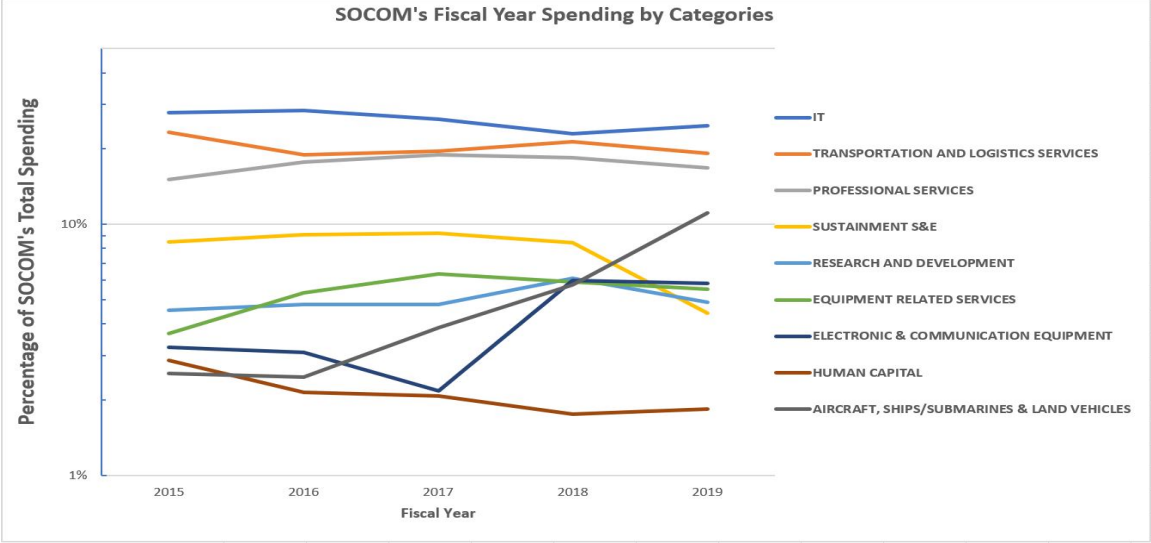

Figure 7. Fiscal Year Spending by Categories. Source: FPDS-NG (2020).

3. Suppliers Per Contract Action versus Contract Types

The chart in Table 13 displays the top 20% of SOCOMs vendor pool for the five fiscal years analyzed (FY 15–FY 19). As stated from the previous chapter, each vendor in the chart has been filtered by its Data Universal Numbering System (DUNS) to avoid duplications. After comparing the award action type codes and indefinite delivery vehicle type codes from FPDS-NG, we determined the following descriptions as shown in Table 12.

Table 12. Award Action Type and Indefinite Delivery Vehicle Type (IDV) Codes Description. Adapted from FPDS-NG (2020).

Award Action Type Codes	IDV Type Codes
A: Blanket Purchase Agreement (BPA)	B: Indefinite Delivery Contract (IDC)
B: Purchase Order (PO)	D: Basic Ordering Agreement (BOA)
C: Delivery Order (DO)	E: Blanket Purchase Agreement (BPA)
D: Definitive Contract (DC)	

Table 13. Suppliers per Contract Actions versus Contract Types. Source: FPDS-NG (2020).

Vendor Name	Award Action Type				Indefinite Delivery Vehicle (IDV) Type		
	A	B	C	D	B	D	E
LOCKHEED MARTIN CORPORATION		5	7,368	40	34		
BOOZ ALLEN HAMILTON INC.			817	52	38		
METIS SOLUTIONS, LLC			716		11		
JACOBS TECHNOLOGY INC.		12	486	90	14		
GENERAL DYNAMICS ORDNANCE AND			389		81		
HARRIS CORPORATION		15	396	4	53		
IGOV TECHNOLOGIES, INC.			416		37		
L3 NATIONAL SECURITY SOLUTION			350	60	9		
JOHNS HOPKINS UNIVERSITY APPL…			411	1	5		
BLUE TECH INC.		2	356				
RAYTHEON COMPANY		3	195	119	40		
GRYPHON GROUP SECURITY SOLUT…			357				
VIASAT, INC.		3	276	12	18		
INSITU, INC.			228	1	50		
EXELIS INC.		2	241	2	15		
ROCKWELL COLLINS, INC.		49	182	12	16		
K-CRUZ			253		6		
CACI-WGI, INC.		4	207	39	5		
ARMA GLOBAL CORPORATION			241		14		
TRIBALCO, INC			239		11		
BOEING SIKORSKY AIRCRAFT SUPP…			192	11	48		
L-3 SERVICES, INC.			219		8		
EAN HOLDINGS, LLC	176		44				3
AAI CORPORATION		6	159	13	45		
YORKTOWN SYSTEMS GROUP, INC.			216		5		
LEADING TECHNOLOGY COMPOSIT…			205		7		
INTELLIGENCE, COMMUNICATIONS…			196		11		
TELEDYNE BROWN ENGINEERING…			161		45		
SIERRA NEVADA CORPORATION			147	14	45		
L3 COMMUNICATIONS CORPORATION		4	162		29		
GENERAL DYNAMICS INFORMATIO…			183		8		
RAMPART AVIATION, LLC		8	145		23		
BOEING COMPANY, THE			153	6	16		
LEIDOS, INC.			150	11	13		
VIGOR WORKS, LLC			153	10	8		
ATLANTIC DIVING SUPPLY, INC.		90	69	2	7	2	
MID ATLANTIC PROFESSIONALS, IN…	26	1	120	6	7		3
INTERNATIONAL DEVELOPMENT & …			149		8		
BATTELLE MEMORIAL INSTITUTE		3	131	6	11		

Comparison of the top vendor pool to the type of award action is essential to determine if there is room for consolidation of contract actions. The chart highlights Lockheed Martin Corporation in red, as SOCOMs top supplier, with 7,368 delivery orders over the five-fiscal year period. This observation means 7,368 awards were made off some type of multi-award contract vehicle. It would be alarming to see high numbers of contract actions for codes B (PO) or D (DC) as this would signal a possibility that SOCOM is wasting time and resources performing a myriad of single contract actions as opposed to implementing a contract vehicle that allows for more efficient use of resources. This depiction would inform SOCOM leadership to look for areas where they can consolidate actions, identify BIC solutions, or use a more efficient contracting vehicle. It appears that SOCOM is efficient in utilization of contact vehicles as the total number of actions in column C (DO) in award action type and column B (IDC) in the indefinite delivery type codes are significantly larger than the total number of actions in columns B (PO) and D (DC) in the award action type.

4. Category Supplier Rationalization

Category supplier rationalization, perhaps the most basic method in terms of opportunity identification, has been the key theme around strategic sourcing for the last several years (Pandit & Marmanis, 2014). We conducted a supplier rationalization analysis for SOCOM's spend data from FY15 through FY19 to identify fragmented spend and opportunities for consolidation.

The chart in Figure 8 breaks down the total amount of spend from the top 10 categories into three sections: SOCOM's top ten suppliers, next ten, and the remainder of their suppliers. The chart shows how supplier rationalization opportunities can be identified at the category level. In the chart, the IT, professional services, and human capital categories are ripe for consolidation.

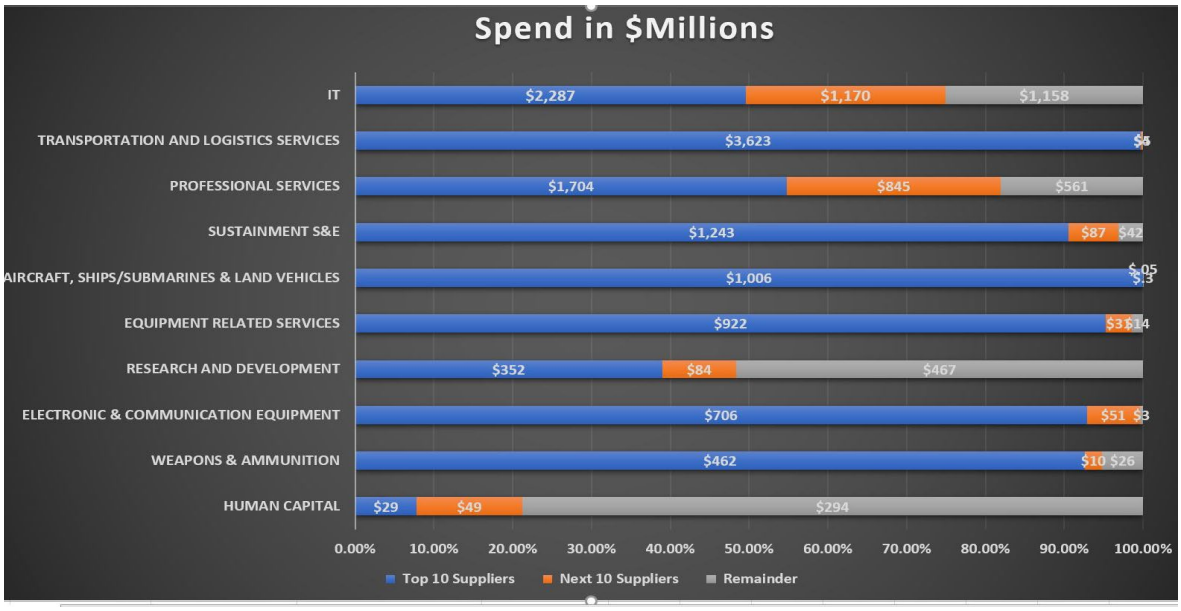

Figure 8. Category Supplier Rationalization. Source: FPDS-NG (2020).

5. Recommendations

Our team's recommendations for the individual categories are in line with answering our first research question: How can the United States Special Operations Command (SOCOM) implement category management to execute at the speed of relevance for operators?

We identified the first recommendation under the "fiscal year spending by categories" analysis. As noted in Figure 7, we identified three categories (IT, Transportation and Logistics services, and the Professional Services) that each encompass over 10% of total spend in the previous five fiscal years. We recommend that SOCOM decision makers assign category managers for these categories of high spend. Furthermore, these spend categories are common categories that other agencies manage at the category level. This recommendation will provide SOCOM the ability to develop in depth knowledge within these three high-spend categories and therefore execute contract actions via strategic contract vehicles at the speed of relevance for operators.

The recommendation for "Suppliers Per Contract Action versus Contract Types" is to look at suppliers that have high numbers for code B (PO) and D (DC) under the Award Action Type Codes. Contractors that have an accumulation of high numbers for these codes

should be looked at for contract action consolidation. Without having a copy of each of these contracts, we cannot determine if SOCOM is being efficient or if there is an opportunity to create or utilize a more strategic contract vehicle like an indefinite delivery vehicle. Implementing an Indefinite Delivery Indefinite Quantity contract or a Blanket Purchase Agreement, would allow SOCOM to cut orders at a more efficient rate, delivering capabilities to the operators faster.

Our final recommendation is for the "category supplier rationalization" analysis. As noted in Figure 8, we discovered categories that are ripe for consolidation (IT, professional services, and human capital). We recommend SOCOM to identify and build partnerships with strategic suppliers to consolidate the currently fragmented supplier base for these categories. In doing so, SOCOM will benefit by building deeper relationships with select strategic partners and able to deliver more value per taxpayer dollar, leading to the ability to procure goods and services necessary to achieve the SOCOM mission. The research and development category also displays a fragmented supplier base; however, in efforts to not hinder innovation, that category will not be considered for consolidation.

B. RESULTS OF THE GAP ANALYSIS

In this section we discuss the results of the gap analysis we conducted between SOCOM's current CM state and desired future states. We organized the results of our interviews into each cornerstone from our framework: (1) organizational alignment and leadership, (2) policies and processes, (3) strategic human capital, and (4) data and intelligence management. We consolidated SOCOM's responses from the key questions we developed to assess how well SOCOM is implementing each cornerstone and element (see Tables 14, 16, 18, and 20). We accomplished this assessment by identifying which are positive areas and which are areas of concern within its current state. A *positive area* signifies a strength or practice that SOCOM is currently doing well to achieve desired CM outcomes while an *area of concern* represents an opportunity area or possible threat to success in achieving the desired CM outcomes. Additionally, we provide best practices for each cornerstone based on interviews with CM experts (see Tables 15, 17, 19, and 21). Finally, we list recommendations for SOCOM to bridge the gap between the current state and the two future states: initial desired state and future ideal state.

1. Cornerstone 1: Organizational Alignment and Leadership

This cornerstone addresses the appropriate placement of the CM function within the organization and ensures that the CM function has dedicated and strong leadership owning the CM program. Agency leadership with core competencies is key to achieving and sustaining organizational support.

a. SOCOM's Current State

After analyzing the current state of organizational alignment and leadership within SOCOMs enterprise, we concluded that SOCOM possesses both positive areas and areas of concern as shown in Table 14.

Table 14. Assessment of SOCOM's Current State for Organizational Alignment and Leadership

Elements	Current State (*) Positive Area (!) Areas of Concern
Alignment of CM and Agency's Mission Needs	(*) Agency directorates have sponsors who manage their own requirements. (*) Agency has established initial CM objectives. (!) CM function has not been appropriately placed within the enterprise. (!) CM organizational structure and principles do not exist.
Commitment from Leadership	(*) Director of Procurement made an initial effort to establish a CM function. (*) Leaders within the agency have expressed interest to implement CM. (!) Agency's senior leadership have not bought in to implement CM.
Change Management	(*) Two early adopters were identified. (!) Agency emphasized culture change as a challenge.

(1) Element 1—Alignment of CM and Agency's Mission Needs

Element 1, titled Alignment of CM and Agency's Mission Needs, aims to validate that the agency's CM function allows the organization to meet its overall mission and needs. The CM function needs to be properly aligned within the agency to meet its objectives, mission, and goals. For this element, we identified the following positive areas **(*)** and areas of concern **(!):**

(*) *Agency directorates have sponsors who manage their own requirements.* - SOCOM has several staff directorates such as Intelligence (J2), Operations (J3), Logistics (J4), who lead and manage specific SOF peculiar requirements. These directorates have designated sponsors who manages their own requirements but are not officially designated and assigned as category managers. At the headquarters (HQ) level, the Preservation of the Force and Family program has a dedicated USAF Colonel (O6) position who owns the program and manages its requirements. As stated in our literature review, category managers act as one of CM key participants. Since these sponsors serve as domain managers, they could be leveraged to focus on categories if they have most of the experience in owning these categories. These domain managers can be potentially delegated to perform as category managers.

(*) *Agency has established initial CM objectives.* - SOCOM has established its initial CM objective, which is to find or develop solutions to execute at the speed of relevance to operators, to include more effective and safer training. An overarching goal for our research includes meeting this established CM objective. The Director of Procurement has emphasized that SOCOM's operators are often involved with high-risk trainings. The establishment of CM objectives enables all CM stakeholders within the enterprise including senior leadership to leverage CM and perform key CM actions towards a clearly stated common goal.

(!) *CM function has not been appropriately placed within the enterprise.* – The CM function has not been appropriately placed within SOCOM's enterprise. Additionally, SOCOM's CM function has not been officially owned or assigned to a specific office or unit within the organization. In our literature review, assignment of a top CM official outside of an acquisition function is essential and strategic to cut through all the other functions within an agency.

(!) *CM organizational structure and principles do not exist.* – SOCOM has not yet established an organizational CM structure and principles, which is an area of concern. The establishment of a CM organizational structure identifies key CM participants and relationships within the agency's CM program with clear and defined roles and responsibilities. Key participants

may include but are not limited to CMAO, category managers, category leads, and CM council directors. Additionally, establishment of CM principles guides and helps all CM participants by providing foundational CM ideals and standards in the execution of their respective roles and duties. However, the agency has expressed willingness to reconfigure its current organizational structure to meet its initial CM objective.

(2) Element 2—Commitment from Leadership

Element 2, titled *Commitment from Leadership,* aims to assign committed and strong agency leadership who can set direction and enable all key participants to work towards achieving common goals. For this element, we identified the following positive areas **(*)** and areas of concern **(!):**

(*) *Director of Procurement made an initial effort to establish a CM function.* -SOCOM's Director of Procurement initial efforts to establish a CM function as a strategic shift is a sign of commitment from leadership. An OPORD drives a plan to coordinate and manage requirements among headquarters, Components and Theatre Special Operations Commands to improve solutions and deliver faster to operators.

(*) *Leaders within the agency have expressed interest to implement CM.*- The Senior Enlisted Advisor to SOCOM's commander has expressed interest for the effectiveness of the acquisition function in accomplishing the agency's mission. Additionally, the J3 directorate has expressed interest in owning requirements to find solutions for safer training to operators.

(!) *Agency's senior leadership have not bought in to implement CM.* - SOCOM's senior leadership have not officially bought in to implement CM across its enterprise. As stated from literature review, securing top leadership and executive support is a critical factor in successful program implementations. Without securing top leadership support, implementing and sustaining change will be challenging.

(3) Element 3—Change Management

Element 3, titled *Change Management*, aims to address the facilitation and adoption of change and the removal of barriers that block the agency's resistance to change. This element aids agency leadership in the successful change implementation of CM across its agency. For this element, we identified the following positive areas (*) and areas of concern (!):

(*) *Two early adopters were identified.* - SOCOM's Director and Deputy Director for Procurement, identify themselves as the agency's early adopters for CM. From our literature review, identification of early adopters who are credible, who have some type of CM expertise, who can provide strategic vision, and control naysayers, is critical for change management. These early adopters act as allies who can support CM as an essential function of the agency, see the need for change and are comfortable with adopting CM. Additionally, these early adopters are critical in the full adoption of CM within an agency.

(!) *Agency emphasized culture change as a challenge.* -The agency has identified culture change as major barrier in CM successful implementation. Furthermore, the agency emphasized on capturing accurate and clean data to drive culture change. Managing change requires specific leadership competencies to include but not limited to, creating cases for change, creating structural changes, engaging others in the whole change process, sustaining changes, and facilitating and developing capabilities.

b. Best Practices

The following section discusses the USAF best practices for *Organizational Alignment and Leadership* developed in collaboration with CM experts as shown in Table 15.

Table 15. Best Practices for Organizational Alignment and Leadership. Adapted from USAF CM PSO (2020).

Elements from Cornerstone 1	USAF's Best Practices
Alignment of CM and Agency's Mission Needs	- Strategic Alignment - Assignment of Category Management Responsibility
Commitment from Leadership	- Strong Senior Leader Advocacy - Strong HQ Staff Support
Change Management	- Strategic Communication Plan - Cross-organizational Collaboration and Trust

(1) Alignment of CM and Agency's Mission Needs

Strategic Alignment – The USAF CMAO has aligned its CM program objectives, principles, and processes to strategic imperatives across its enterprise and even across the DoD. Specifically, the USAF utilizes CM as an enabler for the 2018 National Defense Strategy, 2018 National Defense Business Operations Plan, President's Management Agenda, Cross Agency Priority Goal 7, 2019-2021 Air Force Business Operations Plan, and Air Force Infrastructure Investment Strategy.

Assignment of Category Management Responsibility – The USAF established a Senior Accountable Official outside the Acquisition function (SAF/MG). This position was responsible for business transformation and process improvements and who was capable of crossing cross-functional domains. Category managers responsibility was assigned to functional owners who are already responsible for managing the commodity or service to provide repeatable process or framework.

(2) Commitment from Leadership

Strong Senior Leader Advocacy- The USAF has set clear direction from the top. Senior leadership (SAF/MG) has advocated for stakeholder investment, category leadership, and commitment of people and resources. As an example, SAF/MG clearly defined governance structure and charter with clear lines of accountability. SAF/MG also implemented plan to institutionalize CM across the enterprise by starting with high spend categories and then expand across remaining portfolios.

Strong HQ Staff Support – The USAF HQ staff has actively worked issues, connected functionals, and removed roadblocks. As an example, the staff at HQ provided analytic support, CM training, and governance support such as data repository, CIR workshops, management of CM guides, and establishment of quarterly governance meetings.

(3) Change Management

Strategic Communication Plan – The USAF has implemented strategic messaging, which they described as communicating early and often. Strategic messaging includes blogs, newsletters, Enterprise Sourcing crosstalk, Enterprise Sourcing Summit, operational contracting summit, podcasts, and videos. These strategic messaging platforms provide CM personnel with knowledge on how to utilize AFICC's tool sets and acquire a deeper understanding of CM to incorporate USAF-wide strategic spend initiatives.

Cross-organizational collaboration and trust – The USAF Director of Enterprise Solutions has emphasized that CM is about unity of effort instead

of unity of command in his immersion briefs provided to key CM personnel and any potential agency who wants to establish a CM program. Additionally, the USAF echoes that spend crosses many functional organizations and thus require cross organizational collaboration & trust.

2. Cornerstone 2: Policies and Processes

This cornerstone addresses the governance structure, activities, and procedures that regulate and guide the method an agency executes the CM function.

a. SOCOM's Current State

After analyzing the current state of policies and processes within SOCOMs enterprise, we concluded that SOCOM possesses few positive areas and several areas of concern as shown in Table 16.

Table 16. Assessment of SOCOM's Current State for Policies and Processes

Elements	Current State (*) Positive Area (!) Areas of Concern
Strategic Planning	(*) Agency has expressed intent to comply with the OMB CM guidance. (!) Agency lacks governing body or principal forum. (!) Agency has limited internal and external procedures to report CM performance measures. (!) Agency has made limited partnership with internal organizations.
CM Process Management	(!) Agency lacks CM program operating procedures. (!) Agency lacks CM program performance measures. (!) Agency lacks demand management strategies. (!) Agency has made limited supplier relationship management efforts.

(1) Element 1—Strategic Planning

Element 1, titled *Strategic Planning,* aims to address the identification and management of relationships among all stakeholders involved in the CM process. It also addresses a governing body to devise strategic direction of CM to meet agency needs. For this element, we identified the following positive areas **(*)** and areas of concern **(!):**

(*) *Agency has expressed intent to comply with the OMB CM guidance. –* SOCOM has expressed interest in complying with the key CM actions established by the OMB as a requirement for federal agencies. Specifically, SOCOM has expressed intent to exceed all small business goals to comply with the OMB guidance. The agency has several strategic contracts that are all small businesses.

(!) *Agency lacks governing body or principal forum.* - SOCOM has no governing body or principal forum to initiate strategic planning or direction. Governance structure at the agency level such as CM council, is essential to provide strategic guidance and monitor progress on overall CM performance measures. Additionally, the governing body ensures strategies and resulting solutions are aligned with the agency's CM objectives. The intent is for the lead service liaison for each component to become advisors to category managers and as potential members of the CM council at the HQ.

(!) *Agency has limited internal and external procedures to report CM performance measures.* - SOCOM has limited internal and external procedures to report CM performance measures within the organization and up to the federal level. SOCOM stated that they report SUM and BICs as required by the OMB. Federal category managers are required to report quarterly to the OMB to include savings, reduced contract duplication, SUM, and small business participation. Establishing reporting procedures to monitor performance both internally and externally help agency comply with the OMB and establish accountability for its category managers.

(!) *Agency has made limited partnership with internal organizations.* - The Air Force Special Operation Command (AFSOC), a component within SOCOM, partners with the 765th Enterprise Sourcing Squadron (ESS) at AFICC to leverage CM expertise within its component. However, this partnership with AFICC does not include other components within its enterprise, which is another area of concern. Partnership with internal organizations, as an approach, ensures engagement of CM internal stakeholders and organizations, including contracting, requiring activities, PM offices and other appropriate participants to help ensure seamless integration and execution of CM processes and operating procedures.

(2) Element 2—CM Process Management

Element 2, titled *CM Process Management,* aims to ensure incorporation and management of essential CM operations and processes for a successful execution of the agency's CM function. For this element, we identified the following areas of concern **(!):**

(!) *Agency lacks CM program operating procedures*. – SOCOM has not established any operating procedures as a program guide to CM participants. Lack of operating procedures and guides hinder all key CM participants to understand the step-by-step operations and processes for the execution of the agency's CM function.

(!) *Agency lacks CM program performance measures.* – SOCOM has not established performance measures specific to its enterprise. Establishment of these performance measures allows management of agency's performance to include measurement, monitoring, and analysis of the various executed strategies to understand the impact and success of the strategies to achieve its CM outcomes. Additionally, performance measures allow monitoring of progress and maturity of the CM program against established goals, strategies, and objectives.

(!) *Agency lacks demand management strategies.* SOCOM does not have demand management strategies in place as an enterprise. The only unit at SOCOM performing demand management is the Preservation of the Force and Family at headquarters. Without demand management strategies, the agency lacks incorporation of demand planning and forecasting to get a full understanding of the agency's current requirements and methodology in estimating demand for goods and services.

(!) *The agency has made limited supplier relationship management efforts.* - The only management and engagement of suppliers within SOCOM are only performed when utilizing the Contractor Performance and Rating System (CPARS), which only assesses supplier's performance during a specific period. Establishment of effective supplier relationship management is an essential business strategy. This strategy allows employment of rigorous supplier selection to create a strong supplier base and establishment of communication and relationship management system with suppliers.

b. Best Practices

The following section discusses the USAF best practices for *Policies and Processes* developed in collaboration with CM experts as shown in Table 17.

Table 17. Best Practices for Policies and Processes. Adapted from USAF CM PSO (2020).

Elements from Cornerstone 2	USAF's Best Practices
Strategic Planning	- Creation of the USAF Category Management Council - Partnership with Acquisition and Contracting to Drive Policy
CM Process Management	- Creation of CM Performance Measures - Creation of CM Process Guide

(1) Strategic Planning

Creation of the USAF Category Management Council - The USAF established a governing body at the enterprise level for its CM strategies and initiatives. The USAF CMC ensures that the USAF is executing a disciplined, data-driven process for strategic cost management. Additionally, the council serves as the principal forum for establishing strategic direction and implementation of the USAF CM program.

Partnership with Acquisition and Contracting to Drive Policy – The USAF has partnered with Acquisition and Contracting for CM program governance and execution support. SAF/AQC supports the USAF CM by providing contracting advice and governance, serving as advisor to quarterly CMC, supporting the development of CM performance measures reportable to the OMB, and developing mandatory use policies for contract vehicles and solutions.

(2) CM Process Management

Creation of CM Performance Measures – The USAF has established CM performance measures. Specifically, the USAF believes savings and cost avoidance should result from improvements in rate, process, or demand. These savings and cost avoidance are being reported and tracked in the USAF Cost Savings Tracker for each category and cumulatively for the USAF. The USAF has implemented and monitored metrics that evolve over time. These primary CM performance measures are reported at the federal

level: Spend Under Management, Best in Class, Vendor Management, Demand Management, Cross-Agency Priority Goals, and Small Business Goals.

Creation of CM Process Guide – The USAF has created a CM process guide intended to help users understand step by step CM operations and processes for the execution of the USAF CM. The USAF CM process consists of six steps: category stand up, planning, analysis, Category Intelligence Report recommendation review, recommendation execution, and reporting. These processes have related deliverables during each step to include category charter, category strategic plan, category intelligence reports, recommendation decision document, and CM dashboards.

3. Cornerstone 3: Strategic Human Capital

This cornerstone encompasses the idea that success of an organization comes from the contributions of their people through their expertise and competencies.

a. SOCOM Current State

After analyzing the current state of strategic human capital within SOCOMs enterprise, we concluded that SOCOM possesses several areas of concern as shown in Table 18.

Table 18. Assessment of SOCOM's Current State for Strategic Human Capital

Elements	Current State (*) Positive Area (!) Areas of Concern
Structural Design of Expertise and Capability	(!) Agency has no centralized support established to provide CM expertise. (!) Agency lacks decentralized CM expertise. (!) Component and Theater Special Operations Command (TSOC) level personnel have no training.
CM Talent Development	(!) Agency has no established CM training program. (!) Agency has low prioritization of CM training.

(1) Element 1—Structural Design of Expertise and Capability

Element 1, titled *Structural Design of Expertise and Capability,* focuses on the design of the organization to provide expertise and capabilities and support CM personnel. This support to provide expertise and capability can either be centralized and decentralized. For this element, we identified the following areas of concern **(!):**

> **(!)** *Agency has no centralized support established to provide CM expertise.* -SOCOM has no centralized support established to category managers and other key personnel. Centralized support includes development of skills sets needed and maintenance of program guides, tools, templates, and training. This area of concern hinders the agency to provide centralized support for the agency's CM personnel to execute their duties and responsibilities through establishment of standardized processes and procedures, and management of knowledge repository.
>
> **(!)** *Agency lacks decentralized CM expertise.* - SOCOM personnel have access to tools and trainings limited to the trainings provided by the OMB only. Lack of decentralized support prohibits decentralized units to develop and support their own CM personnel with training, tools, and knowledge.
>
> **(!)** *Component and TSOC level personnel have no training.* - Only USAF personnel have access to the AFICC SharePoint where CM trainings are offered. Inadequate resources to effectively train personnel hinders an organizations ability to properly equip its personnel to meet CM objectives.

(2) Element 2—CM Talent Development

Element 2, titled *CM Talent Development,* focuses on the training and development of CM in the workforce. This element focuses on commitment to training approaches tailored to meet organizational needs and targeted investments in personnel. For this element, we identified the following areas of concern **(!):**

> **(!)** *Agency has no established CM training program.* SOCOM has not established an official CM training program for the enterprise. SOCOM's early adopters both have had some forms of CM training. The Director of Contracting, the Deputy Director of Contracting, and the PEO have taken forms of CM courses online or through CM integration workshops provided by AFICC. SOCOM as an enterprise does not have an adequate understanding of what CM is and what benefits it can provide for an organization. In our literature review, establishment of a comprehensive training program is essential to track delivery and effectiveness of CM training. Furthermore, identification of key personnel to be trained, modality, timeframe, and standards are also critical.

(!) *Agency has low prioritization of CM training.* - SOCOM has expressed that without seeing the return on investment from adopting CM, there is a concern that SOCOM will not invest in resources to become CM experts or prioritize a CM training program. Low prioritization of CM training leads to the inability of personnel to properly perform CM objectives.

b. Best Practices

The following section discusses the USAF best practices for *Strategic Human Capital* developed in collaboration with CM experts as shown in Table 19:

Table 19. Best Practices for Strategic Human Capital. Adapted from USAF CM PSO (2020).

Elements from Cornerstone 3	USAF's Best Practices
Structural Design of Expertise and Capability	- Establishment of Centralized and Decentralized Units of Expertise for CM
CM Talent Development	- Establishment of CM Training Program - Investment in Developing CM experts - Development of CM tools, training, and templates

(1) Structural Design of Expertise and Capability

Establishment of Centralized and Decentralized Units of Expertise for CM – The USAF understood the importance of developing a centralized unit of expertise. The USAF developed the CM PSO which consisted of analytic support, CM training, CM policy and processes and governance support. The skill composition were functional skills and personal skills. Functional skills include: PMs, Operations Research, IT, Financial management, and contracting. Personal skills include- critical thinking, creative thinking, problem solving, data analysis, facilitation, team building, and communication. After a centralized unit was established of expertise, the USAF started training personnel at the different ESS' to develop the decentralized units of expertise. This approach allowed personnel to accomplish different functions of CM at their perspective local level. By developing a centralized unit, the decentralized units were able to reach back for CM support.

(2) CM Talent Development

Establishment of CM Training Program – The USAF developed a CM training program which outlined the different training requirements

required for the functional areas. The USAF developed strategic partnerships with academic organizations to launch CM trainings which would count toward Continuing Professional Education (CPE). The USAF also created different modalities of training to include in-resident trainings and online trainings. A goal for AFICC was to establish a "unified AFICC approach for assessing, developing, and delivering, enterprise level training to produce mission focused business leaders" (AFICC, 2020, p. 9).

Investment in Developing CM experts – As mentioned previously, the USAF had strong leadership buy-in to invest in personnel. AFICC mentioned "Enterprise Solutions" under their mission areas. A results-oriented goal was to "incorporate business intelligence and elements of CM/ Strategic Sourcing training plan into operation contracting units training plans by December 2020" (AFICC, 2020, p. 6).

Development of CM Tools, Training, and Templates – The USAF CM PSO developed CM tools, trainings, and templates as it was deemed the centralized unit of expertise. The centralized support office was tasked with compiling and reviewing existing tools, resources, and trainings to determine what was missing to help educate CM personnel. This information can be accessed through the AFICC SharePoint website.

4. Cornerstone 4: Data and Intelligence Management

Data and intelligence management focuses on ensuring proper management, security, and analysis of data to help agency leaders and CM personnel make data-driven business decisions within the CM function.

a. SOCOM Current State

After analyzing the current state of data and intelligence management within SOCOMs enterprise, we concluded that SOCOM possesses few positive areas and several areas of concern as shown in Table 20.

Table 20. Assessment of SOCOM's Current State for Data and Intelligence Management

Elements	Current State (*) Positive Area (!) Areas of Concern
Data Integrity	(*) Agency owns a data management strategy. (!) Agency struggles to capture clean data from multiple data sources.
Data Storage and Safety	(*) Agency has ability to safeguard data. (!) Agency faces accessibility issues.
Data Analysis	(*) Agency has contracted with a leading analytics firm to analyze the spend data. (!) Agency has limited capability to generate market and business intelligence products.

(1) Element 1—Data Integrity

Element 1, titled *Data Integrity,* ensures agencies have data management strategies to ensure accuracy and useability of captured data from different sources. Additionally, it ensures information systems and management reflect data that are complete, organized, and reliable. For this element, we identified the following positive areas **(*)** and areas of concern **(!):**

> **(*)** *Agency owns a data management strategy.* – SOCOM has a data management strategy that includes guiding principles and data goals and objectives. This strategy allows SOCOM to manage relevant and comprehensible data and provide agency with visibility, insight, and easy access to make well-informed decisions. This strategy also reinforces SOCOM acknowledging the importance of not only having access to accurate and reliable data but being able to share this data with mission partners.
>
> **(!)** *Agency struggles to capture clean data from multiple data sources.* - SOCOM describes the data required by the SOF enterprise as "disparate, incomplete, and not readily accessible or discoverable in a usable and secure form" (SOCOM, 2019, p. 4). Additionally, SOCOM lacks architecture to capture Military Interdepartmental Purchase Request (MIPR) data, which is a problem due to the nature of SOCOMs interdependence amongst the services working together to achieve one unified mission. Ability to extract,

cleanse, organize, verify, and validate data is essential so data reflected in an agency's system can be trusted and reliable.

(2) Element 2—Data Storage and Safety

Element 2, titled *Data Storage and Safety,* pertains to securing and safeguarding of data to make sure data is protected and data internal controls are established. For this element, we identified the following positive areas **(*)** and areas of concern **(!):**

(*) *Agency has ability to safeguard data.* - SOCOM personnel understand the importance of data safety and handling as it is imperative to its mission. Ability to safeguard data is essential to enable an agency to control access to information systems and plan data security programs.

(!) *Agency faces accessibility issues*. SOCOM has accessibility issues due to the secret classification of its data. This area of concern inhibits CM personnel who do not have proper clearances to access data.

(3) Element 3—Data Analysis

Element 3, titled *Data Analysis,* ensures analysis of data which can be translated into comprehensible information about agency activities to include market and business intelligence. For this element, we identified the following positive areas **(*)** and areas of concern **(!):**

(*) *Agency has contracted with a leading analytics firm to analyze the spend data.* - SOCOM has contracted with a leading analytics firm to analyze the spend of its SOF peculiar requirements. As stated in our literature review, a spend analysis is a major key consideration in implementing CM. SOCOM has three data scientists who have limited capability to generate business and market intelligence reports. However, the Director for Procurement has expressed the ability to repurpose the data science team to support the business intelligence activities. The data science team allows SOCOM the ability to visualize, analyze, and interpret SOF peculiar spend data.

(!) *Agency has limited capability to generate market and business intelligence products.* - SOCOM has limited ability to perform data analysis such as cost-benefit analysis, category intelligence reports, spend analysis, market analysis, SME data analysis, and other business intelligence products essential to inform and support category managers. These products are also essential to develop strategic solutions such as BICs. Lack of ability to translate business and market intelligence into discernable acquisition actions, hinders key CM personnel in obtaining information needed to execute key CM actions such as developing enterprise solutions, demand

management strategies, and vendor management. Currently, SOCOM utilizes innovation platforms such as SOFWERX Tech Tuesdays, Vulcan, and Combat Developers to inform market intelligence reports and requirement developments.

b. Best Practices

The following section discusses the USAF best practices for *Data and Intelligence Management* developed in collaboration with CM experts as shown in Table 21:

Table 21. Best Practices for Data and Intelligence Management. Adapted from USAF CM PSO (2020).

Elements from Cornerstone 4	USAF's Best Practices
Data Integrity	- Utilization of "directionally correct" Data - Implementation of Data Improvement Initiatives
Data Storage and Safety	-Interoperability of Data
Data Analysis	- Focus on Data-driven Decisions Supported by Business Intelligence - Creation of Organic Data Analytics Capability

(1) Data Integrity

Utilization of "directionally correct" Data - The USAF acknowledges limitations on data collected and focuses on figuring out how to work with "directionally correct" data. For opportunities with less than decent data available, the USAF acknowledges the possibility of inadequate data and advises not to get hung up on the precision of the data as perfection is the enemy of good enough. Opportunities that have decent data will allow for the creation of internal cost and performance benchmarks. The USAF added that this approach will create the small wins necessary to solve mission problems, which will aid in generating senior leadership buy-in.

Implementation of Data Improvement Initiatives - The USAF understands the importance of the implementation of data improvement initiatives. Data does not get better without changing management data practices and as such, the USAF recommends continuous data improvement. The USAF also highlights improvement recommendations within each Category Intelligence Report (CIR).

(2) Data Storage and Safety

Interoperability of Data – Data storage and safety is paramount in all organizations. Data is stored in a myriad of locations and in various formats. For data to be interpreted into actionable decision making, data must have the ability to be interoperable. This is especially important when dealing with multiple agencies that utilize different platforms. The USAF stores and protects its data by establishing controlled access to its CM tools, dashboards, and Sharepoint sites. The classification of information will impact its storage and handling. The USAF utilizes a secret internet protocol router (SIPR) network to access and retrieve files.

(3) Data Analysis

Focus on Data-driven Decisions Supported by Business Intelligence – The USAF recommends focusing on data-driven decisions that are supported by business intelligence. The use of existing industry reports for business intelligence such as reports from ProcurementIQ, IBISWorld, GovShop, and Gartner, have assisted the USAF in making data driven business decisions. The USAF utilized Category Intelligence Reports (CIRs) in gaining insight into opportunities for individual categories to make data-driven decisions.

Creation of Organic Data Analytics Capability – The USAF emphasizes that there is an emphasis on leveraging existing spend data tools, business intelligence, and market intelligence tools such as AFBIT, OSD Cost tool, and VCE. There are also other functional databases such as asset management and inventory systems that are within the federal government that has been leveraged. The data provided from these platforms have helped reduce/mitigate potential risks.

5. Recommendations

In this section we provide recommendations to SOCOM for both of its initial desired state and future ideal state. The recommendations for the initial desired state pertain to immediate recommended actionable items for SOCOM to stand its initial small-scale CM function and work towards initial operating capability (IOC). The recommendations for the future ideal state pertain to actionable items for SOCOM to implement CM at full operating capability (FOC).

a. Initial Desired State

Based on our interviews with CM experts, we recommend the following actionable items prioritized by elements we deemed necessary for SOCOM to be successful for a small-scale launch of CM.

(1) Data Analysis

The first recommendation for SOCOM is to strengthen its data analytics capabilities. Leaders throughout the DoD are understanding more the importance of data analytics. SOCOM currently has contracted out for a data science team, however, their current job roles and responsibilities do not align with all components required for a sound business and market intelligence function. Business intelligence assists senior leaders in making actionable data-driven business decisions. If SOCOM does not have a sufficient pool of personnel with data analytics capabilities, we recommend that SOCOM repurpose and train personnel through various training programs or contract those functions out. Currently, business analytic trainings are being provided through the Air Force Institute of Technology (AFIT), DAU, and through the AFICC. After analyzing SOF peculiar spend, dashboards can be created for senior leaders to inform them on the six key mission focus areas: PED, OSINT, ISR, MISO, CYBER, and MFF, and provide them an understanding of what the enterprise is buying, from whom, at what prices, etc. The data reflected in these dashboards must be visualized and organized in a way, that senior leaders can immediately interpret them into discernible business decisions.

(2) CM Talent Development

The second recommendation for SOCOM is identify select personnel for a pilot team as internal consultants. These personnel should have a background in operations research, PM, financial management (FM), IT, and contracting. This team will work with the data analytics team to support initial category stand ups for the six key mission focus areas of spend. This pilot team's collaboration will provide future category managers with initial category planning, analysis (requirements and market), findings, observations, and data-driven recommendations to close management, performance, cost, process, and data gaps for the six key mission focus spend areas. SOCOM should leverage AFICC just-in-

time training programs, CM courses offered through DAU, and through the ACES course. The United States Army paid McKinsey to develop the ACES course for business process analytics which is very similar to CM (R. Westermeyer, personal communication, 2020). This curriculum was reviewed and approved as quality training by the USAF CM experts. SOCOM should consider leveraging these successful training programs to build and train its CM talent-pool.

(3) Data Integrity

The third recommendation is for SOCOM to leverage existing spend data tools such as FM databases, asset management, and inventory systems. The organization should understand that data is not perfect, and there will need to be data improvement initiatives established. SOCOM has expressed concern regarding the lack of architecture in tracking MIPRs. SOCOM does not have any organizations tracking all the MIPRs that go out at all the different levels: HQ, components, and TSOCs. When establishing data improvement initiatives, we recommend that the J8 directorate must collaborate with the Director of Procurement in establishing a database system or architecture to better track MIPR data. FM offices track requesting activities' lines of accounting for MIPRs. J8 at the HQ must establish a mechanism for senior leadership and data analytics team to query all the MIPRs data, improve quality of input for these documents, and require organizations at all levels to share these data. When deciding what initial category of spend will be analyzed, SOCOM must also consider a category not unique only to SOCOM but one that aligns to an industry so they can retrieve external cost and performance benchmarks, and utilize industry best practices.

(4) Commitment from Leadership

The fourth recommendation is to get leadership buy-in using the pilot team's findings, observations, and data-driven recommendations to close management, performance, cost, process, and data gaps for the six key mission focus areas of spend. This initial small-scale CM process execution for these spend areas will report initial CM progress and performance to SOCOM's senior leadership. It is important to note that SOCOM's leadership buy-in will be achieved through a phased-approach. First, SOCOM

needs to obtain preliminary commitment from leadership to achieve the first three recommendations. Next, to attain full-scale leadership buy-in, SOCOM will need to provide success stories and iterative CM test cases. More importantly, the application of CM goes beyond cost-savings and must focus on removing a pain point or closing a gap in SOCOM's mission delivery. CM as an approach, focuses on the mission by increasing more mission capabilities per dollar and solving unique functional problems. SOCOM expressed a concern to request leadership buy-in without a positive return on investment for what CM can offer. The analysis and findings provide SOCOM with small wins and improvements in mission delivery. These small wins provide evidence to the positive return on investment from implementing CM and convince leadership to invest additional resources. Senior leadership should be briefed about the benefits that CM offers, so they can further prioritize CM throughout the organization. Additionally, senior leaders should understand that CM as a strategic approach is aligned with the NDS to improve readiness and increase lethality by focusing on mission. We recommend that SOCOM leadership utilize a charter to publish their strategic alignment and intent.

(5) Alignment of CM and Agency's Mission Needs

The fifth recommendation is for SOCOM to tie CM into the organizations mission. This recommendation goes in concert with acquiring commitment from leadership. Aligning CM with agency's mission needs drives leadership buy-in. More specifically, SOCOM should look for an issue that can be addressed through the application of CM. SOCOM expressed a concern in the safety for their SOF operators while conducting high risk trainings. This is an opportunity for SOCOM to shape CM as a mission enabling tool that helps them deliver their mission and solve their problems. The pilot team should work with the J3 directorate, as the requirements owner, to better understand how to alleviate this concern using CM processes such as requirement analysis, market analysis, demand management, and vendor management. Furthermore, SOCOMs senior leader must assign ownership of the CM program. Using the USAF CM program as a benchmark, we suggest that SOCOM assign the CM program to a senior accountable official who is responsible for the management of business processes and business transformations. This position must be able to cross functional lines within SOCOMs organization. Then, category managers

need to be assigned. There is an OPORD driving functional leads and directorates to own their requirements. This is an opportunity for a new OPORD that identifies those functional leads as category managers in preparation for the FOC. This identification of functional leads will allow SOCOM to establish its own CM organizational structure outlining key CM personnel with clear roles and responsibilities.

(6) Strategic Planning

The sixth recommendation is for SOCOM to develop a scaled down version of the federal-level CMLC and the USAF CMC. SOCOM will not succeed without leadership buy-in and a governing body. With a tailored CMC, there will be strategic direction and implementation of SOCOMs CM program. Roles and responsibilities of CM personnel should be laid out. This includes the CMAO, the category managers, and the advisors to the category managers. This governing body will be responsible for monitoring CM progress, execution of charters, review and provide recommendation for CMLC initiatives, monitor and report metrics required by the OMB. We also recommend that this governing body establish its own organizational CM principles and refine SOCOM's objectives in implementing CM. These foundational CM principles should incorporate not only assignment of cost ownership, but also improve overall performance for each category. Like the USAF, we recommend that SOCOM assign the heads of contracting activity (HCA) for each of the components and TSOCs to be advisors for the senior accountable official. These HCAs will support the senior accountable official in governance, reporting and execution of SOCOM's CM function by providing contracting advice, developing, and reviewing mandatory-use policies for contract vehicles and solutions.

(7) CM Process Management

The final recommendation for IOC is to manage CM processes. SOCOM should establish its own CM program performance measures. These program performance measures ensure that strategies are working and help senior leadership understand the impact, success, and wins of the strategies to achieve its CM outcomes. As a lesson learned from the USAF, action will follow whatever metric is measured. If SOCOM sets good metrics, these metrics will drive good behavior. Aligning the metrics to the organizational

CM objectives will also assist in driving the right behavior. Additionally, SOCOM should have metrics that evolve over time and may include the reportable metrics to the organization's governing body and to the federal level such as BICs, SUM, demand management, vendor management, and small business goals as long as it does not prevent SOCOM to achieve its own organizational CM objectives. We also recommend that the centralized support expertise should create a CM process guide for SOCOM. This process guide should include at the minimum, steps from category stand up to reporting of progress and performance. When category managers at SOCOM plan and identify category improvements, initiatives, goals, and reporting requirements, this information must be documented. This document will serve as single authoritative document of approved CM activities to be executed in support of each categories. CM activities should at the minimum include analyses (requirement, spend, market, gaps), supplier relationship management, and demand management. The results of these activities should be documented in a report like the CIRs. These reports should include recommendations ready to be approved and executed. The execution activities should be included in the CM dashboard.

b. Future Ideal State

The following sections list the recommendations to SOCOM for the implementation of its CM function at FOC.

(1) Structural Design of Expertise and Capability

First, we recommend that SOCOM must establish a centralized support office of expertise and capabilities to its CM personnel to include category managers for the implementation and execution of CM. This centralized support includes the development and maintenance of CM guides, tools, templates, training, CM governance, policies, process management, IT tools management, and data analytics that are unique to SOCOM. This centralized support does not function in any of the roles and responsibilities of key CM personnel but to assist in the execution of the key personnel's duties and development of their own deliverables. This centralized office will also assist SOCOM in standing up more categories beyond the initial six key focus areas. This support and assistance extend to all CM personnel when roadblocks emerge in performing their duties.

Next, we recommend decentralization of CM expertise at the HQ, component, and TSOC levels. This approach will allow performance of CM duties at these levels for each of the categories being stood up. All CM personnel must have access to resources outside the agencies to assist with developing and improving CM tools, share best practices, and lessons learned.

(2) CM Talent Development

Aside from leveraging and having access to other agencies training courses and tools, we recommend that SOCOM establish its own CM training program to accommodate its key CM personnel training needs. The training program and courses must be tailored to the CM processes and needs of key CM personnel specific to SOCOM's enterprise. These in-house trainings will equip all key personnel in meeting its CM objectives, goals, and strategies. We recommend collaborating with other agencies such as the USAF and academic institutions in standing up this training program to enhance training effectiveness with the goal of delivering training objectives that would count towards Continuing Professional Education. Additionally, this training program should allow trainees to provide feedback about the effectiveness of the CM courses.

(3) Change Management

To assist with the full adoption of CM within the SOCOM enterprise, we recommend that the identified Senior Accountable Official (SAO) must have strong and clear advocacy. It is important for the SAO to gain its mission partners, service components and TSOCs as allies in adopting CM as a strategic approach in delivering the mission. The SAO must clearly direct and communicate that CM goes beyond strategic acquisition vehicles and acts as an enabler into delivering more mission capabilities per taxpayer's dollar. SOCOM's senior leadership must implement agile structural changes and use CM as an instrument to remove pain points in the delivery of its mission and sustain bigger cases of success. This approach will drive long-term change in behavior across the enterprise as they see tangible improvements in cost, mission delivery, performance, process, and data. Additionally, these improvements must be tracked to incentivize and reward key CM personnel with awards and recognitions.

(4) Data Storage and Safety

The nature of SOCOMs mission calls for proper controls of data while also requiring data be handled in a secure and trusted manner. The enterprise data strategy of SOCOM already includes goals and objectives to address proper data storage and safety to include useability and availability of data across the enterprise. When data is restricted, it should remain accessible to those who meet the clearance requirements. We recommend that the J6 directorate ensures that the enterprise data management strategy is being executed and implemented in a timely manner. Additionally, we recommend that SOCOM possess classified spend data analysts and adjudicators who can vet any aggregate products for use outside of the classified arena. Finally, we also recommend that SOCOM include sharing unrestricted data outside the agency to comply with the key CM actions of the OMB.

C. CONCLUSION

In this chapter, we discussed the results, findings, and recommendations of our spend and gap analysis. We focused our spend analysis in identifying broad picture spend trends, top spend categories, top suppliers, and category supplier rationalization over a five-fiscal year period. We presented recommendations for SOCOM to consider when implementing CM. Lastly, we discussed the findings to our gap analysis, where we provided recommendations for SOCOMs two desired end states: initial desired state and future ideal state.

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V. SUMMARY, CONCLUSION, AND AREAS FOR FURTHER RESEARCH

In this chapter we provide a summary of our research, areas for further research, and a conclusion, which includes answers to our primary research questions. The purpose of this research was to construct an initial framework and provide recommendations to SOCOM in implementing a CM function across its enterprise. Our methodology included conducting a spend analysis to identify trends and provide opportunity analysis to leverage buying power. A gap analysis was performed between the current CM state and the two future states: initial desired state and future ideal state. These analyses provided visibility and insight into SOCOM's expenditures and procurement costs and facilitated recommendations to close the gap and effectively implement CM at both IOC and FOC.

A. SUMMARY

The DoD has been looking for various ways to decrease the amount of money spent on acquisition requirements and improve spend management initiatives. In May 2005, the OFPP published a memo introducing strategic sourcing as a government-wide initiative to assist federal agencies in spend management (OMB, 2005). However, strategic sourcing successes were limited and did not cover the entire enterprise (USAF CM PSO, 2020b). In December 2014, OFPP issued another memo shifting the focus from strategic sourcing to CM (OMB, 2014). Our literature review provided a detailed account of the benefits an organization can obtain from CM. SOCOM, as a federal organization, expressed the need to leverage and implement CM to execute at the speed for relevance for operators. SOCOM is "the unified combatant responsible for training, establishing doctrine, and equipping all special operations forces (SOF) of the Army, Air Force, Marine Corps, and Navy" (Schwartz & Purdy, 2018, p. 2).

In this research we performed spend analysis on SOCOM's spend data from FY15 through FY19 to identify trends and categories with high spend that are ripe for category stand ups. We also developed a framework to assess a CM function at federal agencies adapted from the GAO in concert with inputs from practicing CM experts. This framework allowed our team to assess SOCOM's current CM state and perform a gap analysis. Our

recommendations entailed immediate actionable items for SOCOM to stand its initial small-scale CM function to operate at IOC and future actionable items for SOCOM to implement CM at FOC. The recommendations incorporated USAF best practices, literature, and interviews with CM experts in the field.

B. CONCLUSION

In this section we conclude our research with answers to our primary research questions provided in Chapter I.

(1) How can the United States Special Operations Command (SOCOM) implement category management to execute at the speed of relevance for operators?

As stated in Chapter IV, SOCOM has established its initial CM objective, which is to find or develop solutions to execute at the speed of relevance to operators, to include more effective and safer training. We provided actionable recommendations prioritized by elements for SOCOM to be successful in a small-scale launch of CM and future actionable recommendations to operate at full capability. These recommendations focused on generating small wins for SOCOM in achieving its initial CM objective and place them in a strategic position to execute at the speed of relevance for operators. These recommendations incorporated key considerations of the CM concept and advice from CM experts to also implement a future ideal state and generate bigger cases for success.

For the initial desired state, we recommend that SOCOM prioritize strengthening its data analytics capability, followed by developing a pilot cross-functional team within the enterprise to support initial category standups for the six key mission spend areas. SOCOM should leverage existing spend data tools, establish data improvement initiatives, and look for a category to analyze that is not unique only to SOCOM. This approach provides opportunity for SOCOM to shape CM as an enabler for mission delivery and leadership buy-in. Senior leaders need to be convinced and understand the benefits of implementing CM within their organization. The analysis and findings from the initial category stand ups provide SOCOM with small wins and improvements in mission delivery. These small wins provide evidence to the positive return on investment from

implementing CM and support the fact that CM goes beyond cost-savings, provides more mission capabilities per dollar, and removes pain points within an organization.

For the future ideal state, we highlight the establishment of a centralized and decentralized support office of expertise and capabilities to its CM personnel followed by a robust and comprehensive training program specific to SOCOM. This approach will equip all key CM personnel in meeting SOCOM's CM objectives. We also recommend senior leadership to gain its mission partners, service components and TSOCs as allies in fully adopting CM as a strategic approach in delivering the mission. SOCOM's senior leadership must implement agile structural changes and use CM as an instrument to remove pain points in mission delivery and sustain bigger cases of success in achieving CM objectives. This approach will drive long-term change in behavior across the enterprise as they see tangible improvements in cost, mission delivery, performance, process, and data.

(2) What key considerations of category management should SOCOM focus on to be successful in implementing category management as a practice?

As discussed in Chapter II, key considerations for implementation and adoption of CM include spend analysis, organizational alignment and leadership, expertise and capability, business intelligence and market intelligence, SRM, and use frameworks. Table 22 summarizes these key CM considerations with corresponding descriptions.

Table 22. Key Considerations of Category Management Summary

Key Considerations	Brief Description
Spend Analysis	- Provides a comprehensive understanding of an organization's spending patterns.
Organizational Alignment and Leadership	-Play a critical role in successful change implementations.
Expertise and Capability	- Enables CM participants to fulfill their respective duties.

Key Considerations	Brief Description
Business and Market Intelligence	- Arm decision makers with organized data that enable them to make data-driven business decisions.
Supplier Relationship Management	- Fosters strategic partnership with suppliers.
Use of Frameworks	- Plays an essential role for implementation of a concept or function.

- A spend analysis helps identify targets of opportunities. For SOCOM to be successful in implementing CM, SOCOM should consider leveraging leading analytics firms or build in-house capability to perform spend analysis on a reoccurring basis to uncover spend trends and patterns and opportunities ripe for CM application.

- Organization alignment and leadership play a critical role in successful change implementations. For SOCOM to be successful in implementing CM, SOCOM should consider aligning the CM function with agency's mission needs, having commitment from leadership, and utilizing effective change management.

- Expertise and capability refer to the detailed understanding of roles and responsibilities and the ability to obtain training and expertise necessary to fulfill the duties. For SOCOM to be successful in implementing CM, SOCOM should consider establishing a centralized and decentralized support in expertise and capabilities.

- Business and market intelligence arm decision makers with organized data that enable them to make data-driven business decisions. For SOCOM to be successful in implementing CM, SOCOM should consider developing an effective business and market intelligence functions by leveraging industry reports and existing spend data tools.

- Supplier relationship management encompasses determining spend categories that are important, distinguishing what the organization needs from its supply base to accomplish its strategic goals, and determining how it will accomplish those goals through intervention. For SOCOM to be successful in implementing CM, SOCOM should consider identifying strategic suppliers and leveraging strategic partnerships to drive cost reduction and quality improvement.

- The use of frameworks helps in assessing an organization's performance in a specific function. For SOCOM to be successful in implementing CM, SOCOM should consider utilizing our framework in assessing a CM function and develop its own CM framework for execution or a CM operating model.

(3) What governance structure is needed to effectively implement category management?

Using the USAF as a benchmark, a sound CM function has a governing body at the enterprise level for its CM strategies and initiatives. The USAF CMC ensures that the USAF is executing a disciplined, data-driven process for strategic cost management. Additionally, the council serves as the principal forum for establishing strategic direction and implementation of the USAF CM program. The governance structure of the USAF consists of the CMAO as the chair and each of the Air Force Category Managers as members (USAF CM PSO, 2020b). Additionally, mission partners such as AFICC/CC & SAF/AQC will serve as advisors to the USAF CMC (USAF CM PSO, 2020b). With the support from the USAF CM PSO, the USAF CMC assumes responsibility for tracking all content, metrics, and action items associated with the quarterly council meetings (USAF CM PSO, 2020b).

Similarly, SOCOM should consider establishing its own CMC at the enterprise level. An OPORD should drive the intent for lead service liaisons at each component to become advisors to category managers and as potential members of the CMC at the HQ. SOCOM should also consider assigning the HCAs for each of the service components and TSOCs to be advisors for the SAO. These HCAs will support the SAO in governance, reporting and execution of SOCOM's CM function by providing contracting advice, developing, and reviewing mandatory-use policies for contract vehicles and solutions.

C. AREAS FOR FURTHER RESEARCH

While conducting our research, several areas for further research were identified. We matured the GAO framework by developing a framework to assess a CM function at federal agencies. We recommend that any organization that wants to launch, implement, or assess its own CM function should consider utilizing our framework. We also recommend that any organization that uses our framework should mature our framework by performing follow-on assessments and incorporate newly identified or shifting best practices.

In this study, we were only able to leverage the USAF as a benchmark to build best practices and lessons learned. We recommend further research in incorporating and leveraging any private sector's best practices. Bringing in outside perspectives on CM

initiatives gives light to other best practices the USAF, DoD, or other federal agencies are currently not taking advantage of.

APPENDIX. INTERVIEW QUESTIONS

Interview questions to SOCOM (consistent with our framework to assessing a CM function):

A. ORGANIZATIONAL ALIGNMENT AND LEADERSHIP

1. Element 1 Alignment of CM and Agency's Mission Needs

- What are the primary goals for establishing CM specific to SOCOM?
- What does SOCOMs future state look like, in terms of implementing CM?
- Who is responsible for SOCOM's requirements?

2. Element 2 Commitment from Leadership

- What is the clear vision of SOCOM in implementing CM?
- What concerns does SOCOM currently have with successfully implementing CM?
- What does success look like for SOCOM?

3. Element 3 Change Management

- Who are your early adopters of CM, if any?
- What are SOCOM's pain points?

B. POLICIES AND PROCESSES

1. Element 1 Strategic Planning

- Who is responsible for developing requirements?
- How do the funds flow down through the organization?

2. Element 2 CM Process Management

- How does SOCOM manage vendor performance? What are your methods?
- Does SOCOM have demand management strategies?

- Does SOCOM have a plan for refreshing standards for requirements/ reviewing repeat needs to ensure we are buying contemporary solutions and reviewing needs? If yes, can you explain?
- How does SOCOM manage socioeconomic goals? How could we wrap these goals into our CM goals?

C. STRATEGIC HUMAN CAPITAL

1. Element 1 Structural Design of Expertise and Capabilities

- Does SOCOM intend to support CM with existing structures and/or resources, or build a new organization or office (e.g. BICC or contract support office) to support this effort?
- Does SOCOM have personnel that performs the following roles and responsibilities attached? If not, perform similar roles? For Example: Category Management Key Participants for Air Force

2. Element 2 CM Talent Development

- Is there a plan in place to get personnel trained?
- Do you have resources and funds available to train personnel, if necessary?

D. DATA AND INTELLIGENCE MANAGEMENT

1. Element 1 Data Integrity

- Does SOCOM have a data management strategy?

2. Element 2 Data Storage and Safety

- How does SOCOM safeguard and store data?

3. Element 3 Data Analysis

- How does SOCOM analyze spend data?
- Are you planning to share spend data and price data (in line with OMB CM guidance)?
- Does SOCOM perform Business Intelligence?

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