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An Analysis of the Effect of Knowledge Management on the Execution of Simplified Acquisition Procedures

27 December 2012

by

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ACQUISITION RESEARCH PROGRAM
GRADUATE SCHOOL OF BUSINESS & PUBLIC POLICY
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ABSTRACT

Simplified acquisition procedures (SAPs) are a fundamental and ubiquitous component of federal contracting and are executed by acquisition professionals at all levels of government. Because of their relative simplicity, procurements using SAPs are often left to less experienced personnel who are in the inchoate stages of developing their skills and knowledge. Knowledge management represents the effective organization, dissemination, and utilization of an enterprise's knowledge resources. When designed and executed with sagacity, knowledge management can be used to enhance an organization's effectiveness in executing its mission with consistent and efficacious expertise. The goal of this research is to enable a contracting function to employ knowledge management to gain a competitive advantage in procurements using SAPs by leveraging existing databases, expertise, available training, and other sources of enterprise knowledge.

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LIST OF ACRONYMS AND ABBREVIATIONS

AT&L	Acquisition, Technology, & Logistics
DAU	Defense Acquisition University
DAWIA	Defense Acquisition Workforce Improvement Act
DFARS	Defense Federal Acquisition Regulation Supplement
DoD	Department of Defense
DoDIG	Department of Defense Inspector General
FAR	Federal Acquisition Regulation
FY	Fiscal Year
GAO	Government Accountability Office
JIT	Just-in-Time
NPS	Naval Postgraduate School
OJT	On-the-Job Training
PALT	Procurement Administrative Lead Time
SAP	Simplified Acquisition Procedure
SAT	Simplified Acquisition Threshold
SOW	Statement of Work
UCC	Uniform Commercial Code
USD(AT&L)	Under Secretary of Defense for Acquisition, Technology, and Logistics
WBS	Work Breakdown Structure

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I. BACKGROUND

A. INTRODUCTION

The federal acquisition workforce has shrunken appreciably since the apex of Cold War–era manning. The peace dividend sparked the downsizing of the early 1990s and decreased the acquisition workforce from 250,000 to 124,000 (General Accounting Office [GAO], 2002b), promulgating the retirement and separation of many highly skilled and experienced contracting professionals. At the same time, the defense budget has increased from post–Cold War lows to record highs in response to the Global War on Terror; in 2011 alone, the Department of Defense (DoD) spent $375 billion on goods and services (GAO, 2012). This exodus of knowledgeable personnel, coupled with the increasing complexity of acquisitions and burgeoning defense budgets, has led to the dichotomous expectation of doing much more with much less. Congress has responded to this contradiction by mandating the growth of the acquisition workforce through the establishment of the Defense Acquisition Workforce Development Fund. The fund is intended for hiring roughly 10,000 new acquisition personnel through fiscal year (FY) 2015 (GAO, 2002b). Although this fund has served to increase the number of contracting professionals, it has not, and could not, immediately infuse them with the type of knowledge necessary to execute a growing contractual action workload. Additionally, an increasing number of highly skilled and experienced contracting professionals are approaching retirement; 57.9% of the acquisition workforce is within 10 years of retirement, and 16.8% is currently eligible to retire (Under Secretary of Defense for Acquisition, Technology, and Logistics [USD(AT&L)], 2012). Should the workforce be infused with unskilled new hires at the same time as the highly skilled veterans are departing, there is a potential for a great deal of institutional knowledge to be misapplied or simply forgotten.

Simplified acquisition procedures (SAPs) are streamlined procedures for executing contracts below the simplified acquisition threshold (SAT). SAPs are often viewed as the bread and butter of contracting, they represent the vast majority of total contract actions, and they are likely the first assignments for a new hire. Developing the knowledge necessary to execute SAPs is often addressed in an ad-hoc and just-in-time (JIT) manner; that is, new

contracting hires are often introduced to SAPs concepts only as they are required to utilize them on the job and must often do so of their own volition or with limited guidance. Organizations often fail to initiate or promulgate the development and maintenance of a knowledge management system that can be accessed simply and effectively by their personnel. In failing to do so, the full benefits of an organization's knowledge, both tacit and explicit, cannot efficiently be disseminated, accessed, and utilized by its employees to better perform their duties. In this way, the organization's collective body of knowledge, potentially its most enduring asset, will be squandered.

The emphasis on doing more with less, despite attempts to grow the acquisition workforce, seems to be here to stay. This credence makes it more important than ever that individual contracting professionals be made more effective by having access to relevant knowledge from a variety of sources and that this knowledge serve as an enduring source of continuity as new hires replace retiring veterans. These new hires must know what they are doing and, perhaps most importantly, why they are doing it. A developed and properly disseminated knowledge management system for SAPs can serve as a potent force-multiplier within a contracting organization, enabling the few to do the work of the many and the inexperienced to perform work beyond their initial capabilities.

B. OBJECTIVE OF STUDY

The goal of this research is to enable a contracting function to employ knowledge management to gain a competitive advantage in procurements using SAPs by leveraging existing databases, expertise, available training, and other sources of enterprise knowledge.

C. RESEARCH QUESTIONS

Our primary research question is the following: How can procurements using SAPs be executed more effectively using knowledge management? Our secondary research questions are as follows:

- What is knowledge? What is knowledge management?
- What are typical sources of knowledge in a contracting organization?
- What sources of knowledge are preferred by contracting personnel?

D. METHODOLOGY

The research methodology we use in this report includes the following:

- a literature review focused on knowledge management, contracting processes, and government regulations outlined in the Federal Acquisition Regulation (FAR); and
- interviews with experienced contracting professionals from DoD contracting functions.

In the literature review, we outline and evaluate the origins and intent behind the establishment of SAPs, as well as the development of knowledge management theory. We evaluate interviews for how knowledge is collected and disseminated throughout each organization, as well as for an understanding of the contracting processes employed in executing procurements using SAPs.

E. BENEFITS OF STUDY

The benefits of this research will potentially allow a contracting function to leverage existing databases, expertise, available training, and other sources of enterprise knowledge in order to gain a competitive advantage in executing SAPs.

F. ASSUMPTIONS

We assume throughout this thesis that the reader has a basic understanding of contracting procedures and regulations of the FAR and the Department of Defense Federal Acquisition Regulation Supplement (DFARS).

G. ORGANIZATION

We organize this report in the following manner: In Chapter II, we provide a broad overview of the Defense Acquisition Workforce Improvement Act (DAWIA), SAT, SAP, contracting processes, and knowledge management; in Chapter III, we focus on the methodology behind the investigative techniques and research we perform for this report; in Chapter IV, we outline the report's results; finally, in Chapter V, we conclude the paper by providing summary, conclusions, and outline opportunities for further research.

H. SUMMARY

In Chapter I, we discussed the current state of federal acquisition to give readers an overview of the defense acquisition workforce. We showed how defense spending is increasing and has required a greater number of acquisition professionals. We provide the reader with the objectives of the study, which is to enable a contracting function to employ knowledge management to gain a competitive advantage in SAPs procurements. We discussed the research questions, methodologies, benefits, and organization of the research.

II. LITERATURE REVIEW

A. INTRODUCTION

In this chapter, we review available literature and research to gain a better understanding of knowledge management, simplified acquisition procedures (SAPs), and contracting processes.

B. KNOWLEDGE

With the emergence of the Information Age, knowledge is increasingly being seen as a strategic resource. Patents, trademarks, copyrights, industrial processes, even management techniques; and knowing how to do something, when to do it, or why it must be done are increasingly being viewed as assets as valuable as any raw material or physical infrastructure. "Knowledge is emerging as the pre-eminent economic resource above raw materials, and often money . . . fundamental sources of wealth are knowledge and communication rather than natural resources and labor" (Stewart, 1997). Ideas and information are increasingly being seen as raw materials to be absorbed and transformed into products or services. In the Information Age, intellectual, not just physical, capital has become a potent metric of the economic value of an organization. Knowledge, or "intangible" capital, "contributes as much as physical capital does to a firm's success" (Baldwin & Gellatly, 2006). Defining an organization's worth and potential as simply a combination of land, labor, and capital is no longer sufficient: knowledge, in its myriad of forms, has emerged as a new pillar of organizational success.

C. KNOWLEDGE DEFINITION

Knowledge is power, and therefore it is an asset for people and organizations (Nissen, 2006). Humans have struggled to define just what knowledge is since the origins of philosophical thought and the emergence of epistemology. In the modern age, knowledge again has a variety of definitions. The Defense Acquisition University (DAU) defines knowledge as "the ideas, understanding, and lessons that an organization has learned over

time. . . . Knowledge is condensed information with context that has value for decision and action" (Pollock, 2002). Within this report, knowledge is viewed as

> a fluid mix of framed experiences, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms. (Davenport & Prusak, 1998)

D. KNOWLEDGE HIERARCHY

Davenport and Prusak (1998) and Hawryszkiewycz (2010) believe knowledge can be organized into a hierarchy of which the basic components are data, information, and knowledge and that knowledge is distinguishable from information or data. They define each element of this hierarchy in the following way:

Data are discrete, objective facts that are recorded and are the most basic and ubiquitous components of the knowledge hierarchy of which all other forms of knowledge are composed. As an example, data can be found in tables of statistics and measurements, transaction logs, and in other forms of raw, unfiltered figures.

Information is data that has added meaning or value through contextualizing, categorizing, calculating, correcting, or condensing (Davenport & Prusak, 1998). Information is data that has been synthesized and is often intended to influence or reinforce an opinion or perception. Davenport and Prusak (1998) described information as a "message, usually in the form of a document, or audible or visible communication."

Knowledge is a dynamic mix of experiences, information, and insight that provides a context through which new experiences and information are perceived. Knowledge, unlike information or data alone, enables action (Hawryszkiewycz, 2010) and equates knowledge to the human transformation of information into actionable decisions. Davenport and Prusak (1998) defined knowledge as "information combined with experience, context, interpretation, and reflection" that can "apply to decisions and actions." Figure 1 shows the knowledge hierarchy as a function of the abundance and actionability of the knowledge.

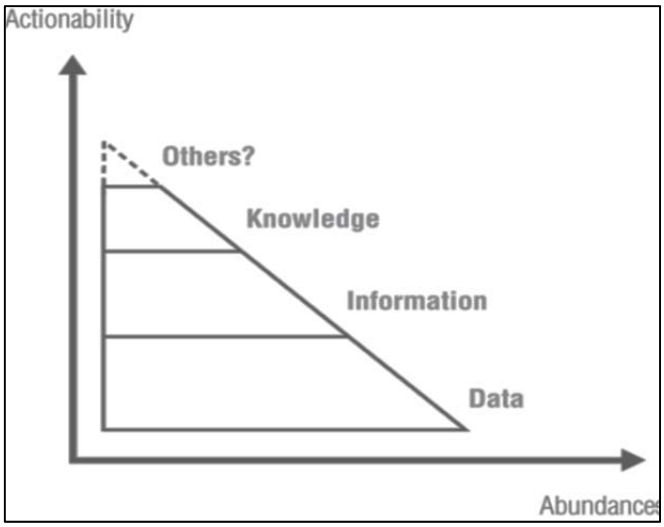

Figure 1. Knowledge Hierarchy
(Nissen, 2006)

E. TYPES OF KNOWLEDGE

Knowledge can be separated into two distinct types: tacit and explicit. Both types of knowledge are an amalgamation of data, information, and experiences; their differences lie in their transferability and outward expression. Michael Polanyi (1966) was the first to classify knowledge into tacit and explicit types. Distinguishing between tacit and explicit knowledge is possible when viewing them empirically, but in practice they are often not discrete or otherwise separate.

Explicit knowledge is codified, documented knowledge that is transmittable in formal, systematic language (Nonaka, Takeuchi, & Umemoto, 1996). Explicit knowledge can be found in any place in which knowledge has been recorded, such as the FAR, dictionaries, encyclopedias, manuals, or established procedures and policies. Any place in which knowledge has been externalized and detailed can be considered explicit knowledge. Figure 2 provides examples of where explicit knowledge may be found.

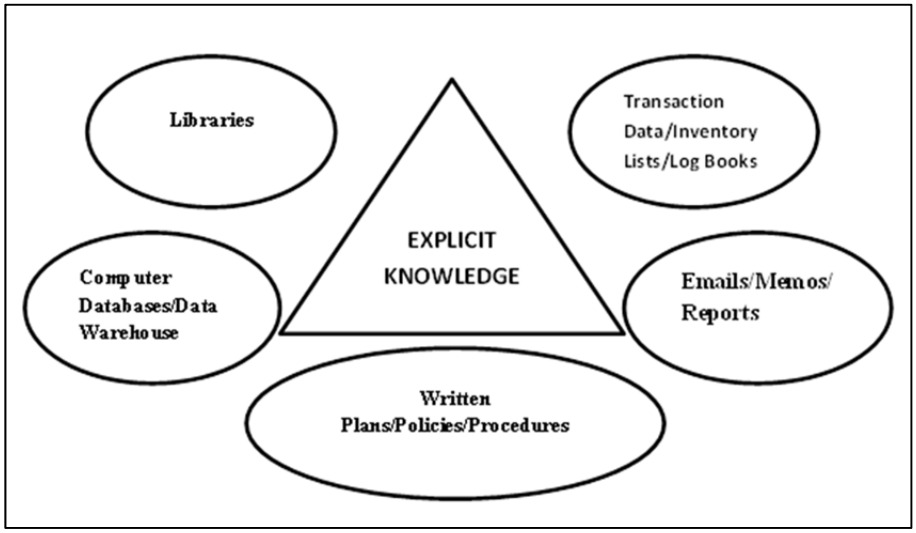

Figure 2. Explicit Knowledge
(Srikantaiah & Koenig, 1999)

Tacit knowledge is the compendium of our mental models and learned behaviors that have been developed over time and through practice. The key to generating tacit knowledge is experience; it is developed and internalized over time and is almost impossible to reproduce in a static form (Davenport & Prusak, 1998). Tacit knowledge is informal, often exchanged interpersonally between individuals and groups, and is otherwise accessible through observation (Liebowitz, 2012). People are often not aware of the tacit knowledge that they possess or even of its potential value to their peers. Effective transfer of tacit knowledge generally requires interaction and personal contact or is accomplished through shared experience. Figure 3 provides examples of where tacit knowledge may be found.

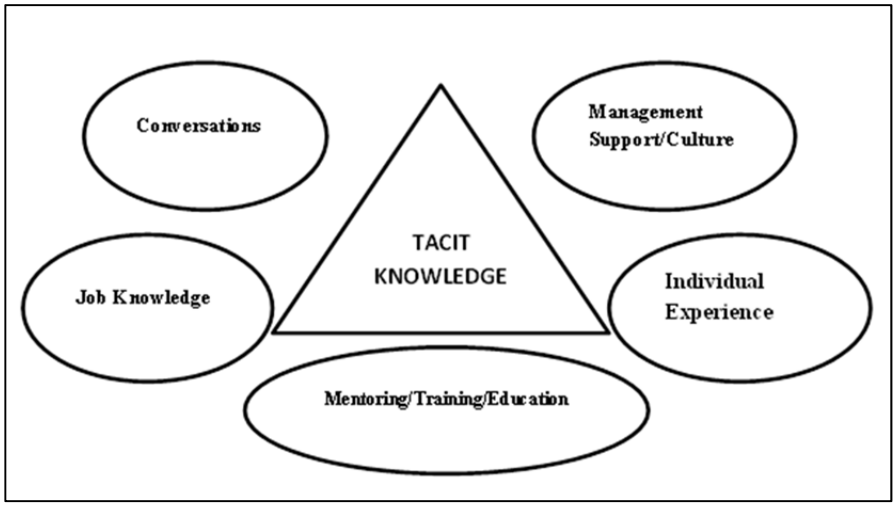

Figure 3. Tacit Knowledge
(Srikantaiah & Koenig, 1999)

To ensure that knowledge is utilized effectively, explicit and tacit knowledge must be combined (Srikantaiah & Koenig, 1999). As the understanding of knowledge and its contributions expands, companies are beginning to realize that competitive advantage can be attained and maintained through the collective intellectual capital of their employees (Liebowitz, 2012).

F. KNOWLEDGE MANAGEMENT

The benefits of knowledge have long been attributed to the accumulated expertise of individuals in an organization, but today the inherent value of generating and disseminating knowledge is recognized and pursued at the enterprise level through a practice known as knowledge management (Nissen, Kamel, & Sengupta, 2000). Rowley (2000) described knowledge management as being "concerned with the exploitation and development of the knowledge assets of an organization with a view to furthering the organization's objectives."

McNabb (2007) defined knowledge management as "a set of processes, practices, and management philosophies that exist to collect, process, store, and make available the organizational knowledge that enables government agencies to be more proficient and competitive in the delivery of public services" (p. 22). Nissen (2006) simplified these definitions succinctly, describing knowledge management as the "practice of leveraging knowledge for competitive advantage." This is the definition that complements our research

goals and will be used for the remainder of this report. KPMG's *The Power of Knowledge: A Business Guide to Knowledge Management* (1999) provided the following objectives for knowledge management:

> Knowledge management is about:
>
> - supporting innovation, the generation of new ideas, and the exploitation of the organization's thinking power;
> - capturing insight and experience to make them available and useable when, where, and by whom required;
> - making it easy to find and reuse sources of know-how and expertise, whether they are recorded in physical form or held in someone's mind;
> - fostering collaboration, knowledge sharing, continual learning, and improvement;
> - improving the quality of decision-making and other intelligent tasks; and
> - understanding the value and contribution of intellectual assets and increasing their worth, effectiveness, and exploitation. (p. 2)

Knowledge management is a process that identifies records and transfers information that can be used to enhance performance or improve related tasks or processes. An organization's adoption of a comprehensive knowledge management system is an indication of an enterprise-wide emphasis on knowledge retention and exchange.

G. KNOWLEDGE FLOW

Contracting is a very knowledge-intensive discipline that requires continuous education and training in order to maintain proficiency and expert power. Knowledge in federal contracting organizations is not a static resource but one that constantly evolves as regulations and the procurement processes to which contracting professionals must adhere evolve in complexity. Success in contracting relies heavily on the flow of knowledge throughout an organization, and "all knowledge required for an organization to perform its work processes and to accomplish its mission needs to flow within such organization" (Nissen, 2006). Knowledge flow is, in essence, learning that takes place between individuals

and organizations. Understanding how knowledge is accumulated and distributed in a contracting organization is of particular importance in ensuring that personnel are exposed to and absorb the skills and techniques necessary to perform their duties. Knowledge is often not evenly distributed across organizations, even though knowledge flow (e.g., across time, location, organization) is critical to organizational efficacy and performance. Figure 4 provides a visualization of directionality in knowledge flow between two sources of knowledge.

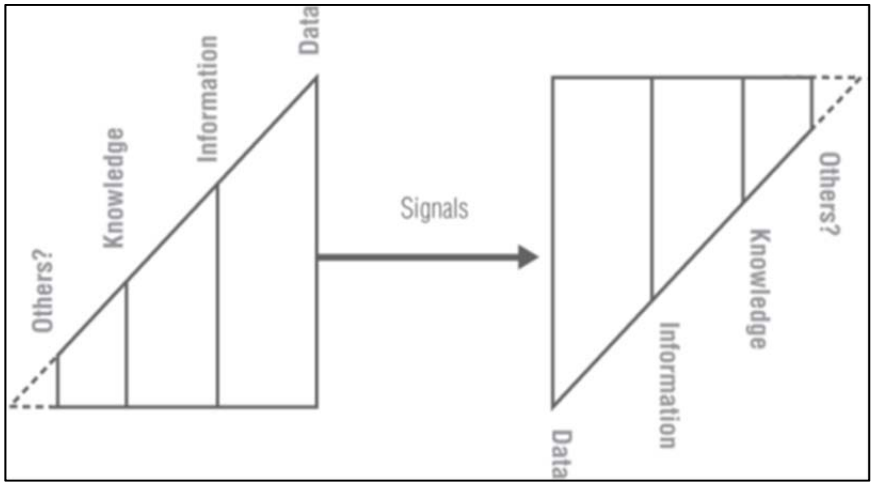

Figure 4. Knowledge Flow Directionally
(Nissen, 2002)

Knowledge flow within an organization occurs when knowledge is exchanged between individuals or provided through organizational resources. When knowledge is allowed to flow freely within an organization, it allows for direct action through learning, rapid and informed decision-making, and efficacious mission accomplishment. In keeping with the knowledge hierarchy, exchange takes place with the synthesis of knowledge into transferable forms (e.g., e-mails, memos, tables of statistics, and databases) and its absorption and synthesis into personal and internalized tacit, or shared and externalized explicit stocks of knowledge. Nonaka and Takeuchi (1996) have developed a "spiral of knowledge" that articulates the manner in which knowledge is exchanged based on the type. Differences in transferability and outward expression can cause variations in the means of exchange between tacit and explicit knowledge and vice-versa. Table 1 details Nonaka's (1991)

knowledge spiral and the means in which knowledge flow process can change based on the type of knowledge.

Table 1. Knowledge Spiral

(Nonaka, 1991)

Knowledge Flow Dimension	Knowledge Flow Process
Tacit to Tacit	Socialization
Explicit to Tacit	Synthesizing
Tacit to Explicit	Articulation
Explicit to Tacit	Internalization

Knowledge is required for individuals within an organization to perform their work effectively, and its distribution and ease of access are crucial to organizational performance. Knowledge enables work to be accomplished, which, in turn, drives organizational performance. Nissen (2006) stated,

> To the extent that organizational knowledge does not exist in the form needed for application or at the place and time required to enable work performance, then it must flow from how it exists and where it is located to how and where it is needed.

For this knowledge flow to occur, the knowledge source must be capable, willing, and able to transfer knowledge and the recipient must be capable, willing, and able to accept it.

Individuals within a contracting organization are continuously cultivating their own tacit and explicit knowledge through continuous education and by searching for and accumulating access to explicit knowledge sources, such as databases and templates. Knowledge generation is contingent on developing both tacit and explicit knowledge and internalizing and externalizing both of them (Nonaka, 1994). Knowledge is an increasingly potent force in organizational performance. According to Nissen (2012), "all high-performance organizations understand the power of knowledge, not only to enable and sustain competitive advantage, but even for effective execution of routine business

processes" (p. 1). A person with access to a relevant stock of knowledge has a competitive advantage; and, by managing the quality and abundance of their own knowledge, individuals can directly influence their job effectiveness and the level of knowledge within the organization as a whole.

H. THE GOVERNMENT CONTRACTING PROCESS

Contracts are a simple legal concept that can be complex in execution. The *Nolo Legal Dictionary* defines a contract as "a legally binding agreement involving two or more people or businesses (called parties) that sets forth what the parties will or will not do" ("Contract," n.d.). Cornell Law School defines the essential elements of a contract as mutual assent, consideration, capacity, and legality. Each of these must be present in order for a legal contract to be formed. Garrett and Rendon (2005) provided structure for the contracting process by dividing it into six distinct steps: procurement planning, solicitation planning, solicitation, source selection, contract administration, and contract closeout or termination.

Procurement planning involves the process of identifying which business needs can be best met by procuring products or services outside the organization. This process involves determining whether to procure, how to procure, what to procure, how much to procure, and when to procure (Garrett & Rendon, 2005). This phase of the contracting process includes the following key activities:

1. determining and defining the procurement requirement;
2. conducting market research and/or a pre-solicitation conference;
3. developing a preliminary work breakdown structure (WBS) and statements of work (SOW), or a description of the supply or service to be procured;
4. developing preliminary budgets and cost estimates; and
5. considering contract type, risk assessment, and any special terms and conditions.

Solicitation planning involves the process of preparing the documents needed to support the solicitation. This process involves documenting program requirements and identifying potential sources (Garrett & Rendon, 2005). This contracting phase includes the following activities:

1. selecting appropriate contract type;
2. determining a procurement method (e.g., sealed bids, negotiated proposals, e-procurement methods, or procurement cards);
3. developing the solicitation document (e.g., IFB, RFQ, or RFP);
4. determining proposal evaluation criteria and contract award strategy (lowest priced versus best value);
5. structuring contract terms and conditions; and
6. finalizing solicitation (WBSs), (SOWs), or product or service descriptions.

Solicitation is the process of obtaining information (bids and proposals) from the prospective sellers on how project needs can be met (Garrett & Rendon, 2005). This phase of the contracting process includes the following:

1. conducting pre-proposal conference, if required;
2. conducting advertising of the procurement opportunity, or providing notice to interested suppliers; and
3. developing and maintaining a qualified bidder's list.

Source selection is the process of receiving bids or proposals and applying the proposal evaluation criteria to select a supplier (Garrett & Rendon, 2005). The source selection process includes the contract negotiations between the buyer and the seller in attempting to come to an agreement on all aspects of the contract, including cost, schedule, performance, terms and conditions, and anything else related to the contracted effort. This source selection process includes the following activities:

1. applying evaluation criteria to management, cost, and technical proposals;
2. negotiating with suppliers; and

3. executing the contract award strategy;

Contract administration is the process of ensuring that each party's performance meets the contractual requirements (Garrett & Rendon, 2005). The contract administration process includes the following:

1. conducting a pre-performance conference;
2. measuring contractor's performance by using performance evaluation tools (earned value management, schedule analysis, or budget analysis);
3. conducting risk monitoring and control;
4. managing the contract change control process;
5. measuring and reporting contractor's performance (cost, schedule, performance); and
6. conducting project milestone reviews.

Contract closeout or termination is the process of verifying that all administrative matters are concluded on a contract that is otherwise physically complete (Garrett & Rendon, 2005). The contract closeout process includes the following activities:

1. processing property dispositions;
2. conducting final acceptance of products or services;
3. processing final contractor payments;
4. documenting contractor's performance; and
5. conducting post project audit.

These steps are distinct and applicable to all forms of contracting. Federal government contracting forms a distinct field of contracting and can be complex in its execution. Federal contracting adheres to the basic contracting principles outlined above but do so in addition to a myriad of additional laws and regulations. Navigating these supernumerary regulatory requirements can be complex, and any means of bypassing or waiving them is viewed as a way to expedite contract award and execution.

I. SIMPLIFIED ACQUISITION PROCEDURES

SAPs were created to streamline the procurement of supplies and services, construction, research and development, and commercial items below the SAT. The SAT, with a handful of exceptions, represents a contract obligation amount between $3,000 and $150,000 (FAR 2.101); and, as a means of promoting small business development, are "reserved exclusively for small business concerns" (FAR 13.003(b)(1)). In FY 2007 alone, 93% of all contract actions executed by the federal government were below the SAT, a number which constituted only 6% of total dollars obligated (GAO, 2012). The SAP is a consequence of reconciling the large volume of contracts to be executed below the SAT with the relatively miniscule proportion of the budget they represent; it is a simple and flexible means of awarding a large number of relatively low value contracts. According to FAR Part 13, a SAP is intended to do the following:

- reduce administrative costs;
- improve opportunities for small, disadvantaged, women-owned, Veteran-owned, HUB Zone, and service-disabled veteran-owned small business concerns to obtain a fair proportion of government contracts;
- promote efficiency and economy in contracting; and
- avoid unnecessary burdens for agencies and contractors.

Traditional contracting methods can be cumbersome in implementation and onerous in documentation. As a means of doing "more with less," the efficiencies afforded by SAPs are an enabler. SAPs reduce the regulatory and procedural burden and gives contracting officers flexibility in soliciting and awarding contracts. SAPs provide relief from the "red tape" with the help of the Federal Acquisition Streamlining Act of 1994. This act made a number of laws inapplicable to contracts awarded within the SAT (FAR 13.005). The FAR also makes a number of standard solicitation provisions and contract clauses inapplicable below the SAT (FAR 13.006). One of our research questions is: when is knowledge required in SAPs? The vast amount of knowledge that is required to effectively execute SAPs is needed throughout the entire six phases of the contracting process (see Table 2). The

elimination of these laws, provisions, and clauses makes drafting a solicitation and writing a contract award a much more straightforward endeavor.

Table 2. Contract Management Federal Acquisition Regulation Matrix

(Rendon, personal communication, 2012)

Contract Management Key Process Area	Contract Management Key Practice Activity	FAR Part
Procurement Planning	Requirements Analysis	11
	Required Sources of Supply and Services	8
	Acquisition Planning	7
	Market Research	5, 10
	Determine Competition Environment	6
Solicitation Planning	Document Competition Environment	6
	Determine Procurement Method	12, 13, 14, 15
	Determine Evaluation Strategy	12, 13, 14, 15
	Develop Solicitation Documents	12, 13, 14, 15
	Determine Contract Type/Incentive	16
	Determine Terms and Conditions	52
Solicitation	Advertise Procurement Activities	5
	Conduct Conferences (pre-sol, pre-proposal)	10, 15
	Amend solicitation documents as required	12, 13, 14, 15
Source Selection	Evaluate Proposals	12, 13, 14, 15
	Apply Evaluation Criteria	12, 13, 14, 15
	Negotiate Contract Terms and Conditions	12, 13, 14, 15
	Contractor Responsibility Standards	9
	Select contractor	12, 13, 14, 15
	Manage Protests, Disputes and Appeals	33
Contract Administration	Conduct conferences (post-award, pre-performance)	42
	Manage contract change process	43
	Monitor contractor's management of subcontracting	44
	Manage government furnished property	45
	Monitor and measure contractor performance	46
	Manage Transportation Issues	47
	Manage Value Engineering Issues	48
	Manage contractor payment process	30, 31, 32
	Manage patents, data, copyright, bonds, insurance, taxes	27, 28, 29,
	Manage Protests, Disputes and Appeals	33
	Comply with terms and conditions	52
Contract Close Out	Verify contract completion	42
	Verify contractor compliance	42
	Ensure contract completion documentation	4
	Make final payment	4, 31, 32
	Document lessons learned/best practices	4
	Process contract terminations, if applicable	49
	Dispose of buyer-furnished property and equipment	45
	Process contract closeout procedures	4

Table 3 highlights differences between SAPs and traditional contracting methods in the areas of speed, economy, responsiveness and simplicity.

Table 3. Comparisons of SAP Vise Traditional Acquisitions

(Gillespie, 2005)

SAP acquisitions	Traditional acquisitions
Speed - The ability to modify advertisement periods can significantly decrease possible procurement time in event of an urgent situation.	Long procurement times - Ensures adequate advertising for competition and all aspects are explored prior to award.
Economy - Cost per transaction decreases as time spent on each procurement is cut and man-hours significantly reduced.	Lack of economy - Each transaction is labor intensive with long time requirements and many required steps in the process, and the cost per transaction goes up in an attempt to save money.
Responsiveness- Broad participation by many manufacturers ensures the customer's needs are met. No special requirements for dealing with the government entice a larger competition base to choose an item from.	Lack of responsiveness- The linty of requirements to do business with the government preclude some products from being considered. Some companies are not willing to sell to the government with so many restrictions and requirements (e.g. SYSCO).
Simplicity- There is a lot to be said about understanding every step of a process and being proficient at all of them.	Complex- Many steps, many requirements, not many experienced contract specialists qualified to award contracts.

Simplified purchases are expected to be made in the most suitable, efficient, and economical manner, based on the circumstances of each acquisition (FAR 13.003(g)). Purchasing offices are expected to keep documentation to a minimum; a contract file will typically contain only the essential elements of the solicitation and award, such as market research, the abstract of proposals, contract award, and payment and delivery confirmation. The FAR gives great flexibility in how SAPs are employed but outlines four considerations for a contracting officer to adhere to

- promote competition to the maximum extent practicable;
- establish deadlines for the submission of responses to solicitations that afford suppliers a reasonable opportunity to respond;

- consider all quotations or offers that are timely received; and
- use innovative approaches to the maximum extent practicable in awarding contracts using SAPs (FAR 13.003(h)).

Promoting competition is important because it increases the likelihood of awarding a contract to a business whose offer represents the most advantageous deal to the government. SAPs give contracting officers broad discretion in developing procedures for the evaluation of these offers. Their foremost concern is that the proposed price is fair and reasonable. This can be determined based on competition, market research, comparison with prior purchases, current price lists, comparison with similar items, personal knowledge, an independent government estimate, or any other reasonable basis (FAR 13.106-3).

The policy of the federal government is that "agencies shall use simplified acquisition procedures to the maximum extent practicable for all purchases of supplies or services not exceeding the simplified acquisition threshold" (FAR 13.003). Although there are exceptions to this policy, it is largely adhered to for purchases below the SAT. Ultimately, SAPs are tools that both streamline contracting and also implement the larger socio-economic goals of the federal government. This is accomplished by reducing paperwork and mandatory procedures, lowering costs of procurement, and allowing small business the exclusive opportunity to bid on a large swath of contracts for which they might not otherwise be able to compete.

J. SUMMARY

In this chapter, we provided an overview of the literature that we consulted while researching this report. Our research of types of knowledge, knowledge management, contracting processes, and SAPs has served to edify and frame our perspectives on the role knowledge management has to play in executing SAPs. We will outline and expand on these perspectives in the following chapters.

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III. METHODOLOGY

A. INTRODUCTION

In this chapter, we explain the investigative techniques and research we performed to conduct this research. We examine the methodology for collecting data and the reasoning behind the selection of the contracting offices. Our team utilized face-to-face interviews along with a literature review to gain insight into a multitude of characteristics at various contracting organization. We designed these interviews to reveal the processes and knowledge flows that benefit the organization and allow it to satisfy the needs of its customers as efficiently and effectively as possible. In this chapter, we also reveal the selection of interviewees and the characteristics of the data obtained.

B. SELECTION OF CONTRACTING ORGANIZATIONS

We conducted interviews with personnel from two DoD contracting offices. The identities of the organizations and the identities of all personnel interviewed have been kept confidential and the contracting offices will be referred to as Organization Alpha and Organization Bravo. We chose organizations Alpha and Bravo based on a variety of characteristics that we felt a successful contracting organization should have. Our team wanted to choose contracting offices with personnel that had a wide range of experiences to allow for ample data collection. If the organization's missions were too dissimilar, we would not have been able to draw comparisons between their personnel. Conversely, if the organizations were too similar, we would not have achieved any definitive analysis. We took these factors into account when deciding which organizations we would analyze. We considered the option of conducting research with non-DoD contracting activities; however, we decided that drawing parallels between personnel at a DoD organization and a non-DoD organization, with entirely dissimilar regulations and processes, was outside the scope of this research. Although the federal government wants to emulate certain practices from the private sector, a direct comparison of DoD to non-DoD contracting offices would not be a worthwhile study for this project.

Organization Alpha has an exceptional contracting history. It is known as one of the busiest and most well-run contracting organizations in its command. Although much larger than the many other contracting organization of its kind, Organization Alpha has an interconnectedness that is usually found in smaller offices. Its personnel have a wide range of experiences and backgrounds and have anywhere from less than one to more than 30 years of experience. A vast majority of Organization Alpha's contracting personnel are fledgling contracting specialists with around two years of experience. The office is organized based on types of contracting with commodities, services, and construction contracting sections. The organization provides contracting support for nearly 40 of the units located on the installation.

Organization Bravo is a relatively new contracting organization. It is one of the many DoD contracting offices that is going through restructuring to alleviate workload issues and provide better service to the customer. One of the organizational policies instituted to aid in this initiative is being grouped into sections based on the customer being served. This policy allows for the contract specialist to gain specialized expertise in their customer and the ability to tailor their contracting skills toward their customer's requirements. Organization Bravo's personnel also have a wide range of experiences anywhere from two years to 25 years of contracting experience. Organization Bravo's personnel have more experience in contracting with a majority of them having more than five years in the contracting career field. They provide contract support for five different geographically separated units/organizations.

In addition to personnel at these organizations we also surveyed our contracting curriculum peers at the Naval Postgraduate School. This collection of students represented a diverse swath of contracting experience across many different organizations and commands. Their contracting experience ranged from four to 13 years, and all had executed SAPs. Their insight into contracting processes and knowledge within contracting organizations was also enhanced by the fact that they are officers who had held leadership roles in contracting organizations.

C. RESEARCH METHODS AND INTERVIEW QUESTIONS

We conducted an analysis of the relative similarities in organizational structure and contracting processes to determine the relative efficacy of disparate organizational approaches and personnel experience in executing SAPs. We collected data primarily through a literature review and interviews conducted with contracting professionals. We conducted the literature review on the topics of knowledge management, SAPs, organizational structures, and DoD contracting methods. We accessed literature through many sources, including the collection of theses and references at the Dudley Knox Library. Online resources included the Defense Business Board (2011), the FAR and its supplements, and the Internet. We were also given a great deal of information from our thesis advisors and from the upcoming literature and research they have previously accomplished.

We conducted interviews with experienced contracting professionals, military as well as civilian, working in DoD contracting offices from different Service branches. We conducted the interviews to gather impartial, fact-based information about contracting processes, experience levels, organizational structure, SAPs, and performance measurement within each organization. Aside from current experience in SAPs, we had little criteria for selecting interviewees. This was by design as we wanted our data to provide an accurate and unbiased representation of DoD contracting personnel. Experience in DoD contracting ranged from less than one year to 28 years and represented a broad cross-section of contracting capabilities and knowledge. Along with their years of experience, participants were asked about their DAWIA certifications, when they had obtained these certifications, and whether they had or had ever held a warrant. In our interviews, we primarily focused on SAPs and experiences with contracting below the SAT, but the interviews were enriched by examples of contracting in other capacities. The interviewees were explicitly informed that personal opinions were not being sought, nor would they be included in our presentation of this research.

We conducted the interviews using a semi-structured approach wherein we designed questions to elicit discussion and reflection from the interviewees. We kept the number of prepared questions to a minimum, but invariably, and as intended, the interviews spawned follow-on questions about the information the interviewees disclosed. Of particular interest

were the fact-based comparisons drawn by experienced contracting professionals between the SAP processes at their current organization and ones in which they had worked in the past. These comparisons, when rooted in impartial and informed analysis based on experience, served as potent multipliers of the data gathered and the inferences that could be drawn from it.

In an effort to build a process framework, we explicitly requested that interviewees describe their organizations, their places in them, and the processes used to conduct SAPs, from the initiation of a requirement to contract execution and closeout. The disparity in the thoroughness and depth of each description, along with knowledge about processes that contributed to it from outside the organization, was often apparent and related to the experience of the individual.

We asked how each organization measured contracting performance, both qualitatively and quantitatively, to determine comparative measures of the success of each organization in executing SAPs. We noted the presence or absence of these measures of performance and whether interviewees were aware of them and their impact on the organization.

There is a plethora of knowledge sources upon which the entire acquisition community relies in everyday tasks. To gain insight into what type of knowledge sources contracting personnel deemed useful, we gave them a survey (see Table 4) that asked them to rank on a scale from 1 to 5 how helpful they felt each type of knowledge source was throughout the contracting process. The sources of knowledge across the top of Table 4 are areas that a contracting professional can access at any time when they have questions about a particular contract action. A further description of each source of knowledge listed in Table 4 is as follows:

- On-the-job-training (OJT): OJT is training a contract specialist would receive as they first arrive into a contracting office, or when they encounter a new issue and get instruction from a supervisor on how to resolve that issue or perform that contract action.

- Peers, co-workers, contracting officer: Peers, co-workers, and the contracting officer are who a contract specialist may consult when they need guidance on a certain issue because they have experience in the particular contract area.
- Mentoring: Mentoring is a more formal method of training. A new hire may be assigned a mentor/trainer when they arrive in a contracting office.
- Online Knowledge Tools: Contracting professionals can refer to a multitude of online acquisition databases and websites when they confront an issue they do not know how to resolve. Examples of these databases are ACQipedia and DAU's Ask a Professor.
- Formal contracting training: Training courses provided by the DAU's mostly online courses that vary in the length of time to complete. Some courses are provided in residence and last approximately one to two weeks.
- Education: Undergraduate and graduate education received before or during contracting career.

Table 4. Knowledge Source Table

Please rank on a scale of 1-5 how each knowledge source helps you in each phase of contracting. (1 being the least amount of help, and 5 being the most helpful)						
	On-the-job training	**Peers, coworkers, contracting officer**	**Mentoring**	**Online knowledge tools (Google, Ask a Professor, FAR, ACQuipedia, etc.)**	**Formal contracting training (DAU courses, agency-specific acquisition education)**	**Education (undergraduate/ graduate degrees)**
Procurement Planning						
Solicitation Planning						
Solicitation						
Source Selection						
Contract Administration						
Contract Closeout						

Finally, we identified the sources of knowledge that the interviewees accessed while performing their duties and when they had specific questions. We were interested in how knowledge was collected and dispersed throughout each organization and whether there were formal or ad-hoc processes for disseminating information. We sought sources of knowledge as a way to draw comparisons about contracting process effectiveness by the ease at which knowledge could be solicited, collected, and exchanged. We also wanted to determine which sources of knowledge were referred and most useful to contracting personnel. The actual interview questions are located in the Appendix.

D. SUMMARY

In this chapter, we identified the investigative techniques and research performed. We examined the methodology for collecting data and the reasoning behind selecting the contracting organizations we chose. Finally, we revealed our research methods, including literature reviews and the interview strategy, along with the purpose behind individual lines of questioning.

IV. RESULTS

A. INTRODUCTION

In this chapter, we analyze and discuss the data we collected in our research. The results of the interviews were very revealing about how effectively the various organizations operated and how the personnel handled tasks presented to them. The interviews revealed how much emphasis contracting personnel placed on explicit and tacit knowledge and how useful they viewed the training and education provided to them, as well as the differences in knowledge sources being accessed by less experienced and more experienced personnel. In this chapter, we show how knowledge is managed and disseminated in organizations and how the execution of contract actions are affected by the organizations' knowledge management practices.

B. ORGANIZATION DEMOGRAPHICS

Organization Alpha has approximately 85 contracting officers and contract specialists. Out of those 85, we interviewed 12 contracting personnel who primarily operate within the SAT, but most had contract actions for which they were responsible that exceeded the SAT. They volunteered out of the two sections circled in the organizational chart (see Figure 5). Three of the personnel were warranted contracting officers; the other nine were contract specialists (see Table 5). The average experience of the specialists was approximately two years. One interviewee had three years of experience in the office and was considered very seasoned and was the second most experienced buyer in that particular section.

The education level in Organization Alpha has changed over the past five years. Out of the 12 people that we interviewed, five of them had bachelor's degrees, and three others either had a master's degree or were working on obtaining it. One contracting officer stated: "It is different now. All the newbies already have Master's Degrees, so they come in having a lot more education that previous hires."

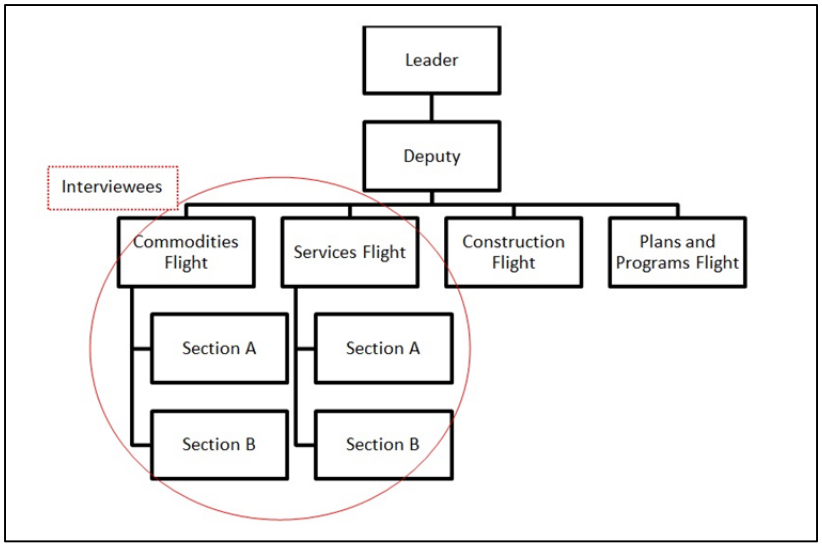

Figure 5. Organization Alpha Organizational Chart

Note. We created Figures 5 and 6 based on interviews conducted at Organizations Alpha and Bravo.

One aspect that was revealed almost immediately was that, in both Organizations Alpha and Bravo, the younger, more inexperienced personnel had more ideas about change and what policies and procedures could be improved. The more experienced personnel with six or more years of experience did not talk much about improving processes; rather, they were more concerned with merely getting the work accomplished and not necessarily in a more efficient fashion.

Organization Bravo has approximately six contracting officers and 20 contract specialists. We interviewed six personnel who volunteered from each section of the organization, as shown in Figure 6. Organization Bravo is operating with less than 70% of its previous manning. Two of the interviewees had master's degrees; one did not have a bachelor's degree and was grandfathered into contracting career field once this educational requirement was added. This organization has recently been going through numerous personnel changes and changes in organizational structure. The organization is currently being altered, as shown in Figure 6.

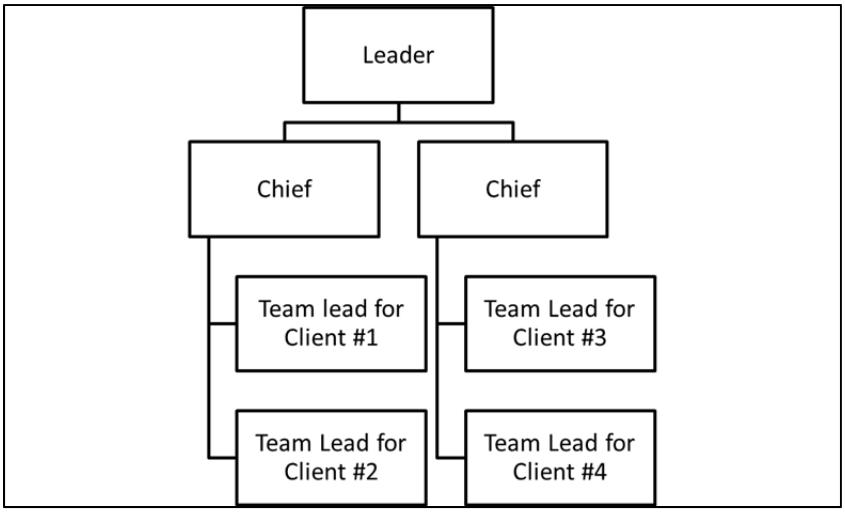

Figure 6. Organizational Chart for Organization Bravo

Note. We created Figures 5 and 6 based on interviews conducted at Organizations Alpha and Bravo.

Table 5. Number of Personnel Interviewed

Organization	Contract Specialist	Contracting Officer	Total
Alpha	9	3	12
Bravo	5	1	6
NPS	N/A	N/A	6
Total	14	4	24

C. SOURCES OF KNOWLEDGE

One of the more surprising aspects of the data collected was the variety of responses of what is used when contracting professionals have a question concerning certain contract actions. In Organizations Alpha and Bravo, OJT and obtaining knowledge from peers is by far the most useful of all possible sources of knowledge for contracting personnel. An aggregate view of every data point collected from Organizations Alpha and Bravo and from our NPS classmates is shown in Table 6. Based on the responses from Table 4, we took an average of all the rankings received per phase of contracting for each source of knowledge.

The chart also shows the average ranging for each type of knowledge per phase of contracting.

Table 6. Interview Data

average of all Tacit and explicit			3.854				2.500	
Avg of Tacits		On-The-Job Training	Peers, Coworkers, Contracting Officer	Mentoring	Online knowledge tools (Google, Ask a Professor, FAR, ACQuipedia, etc.)	Formal Education (DAU courses, Jumpstart)	Education (undergraduate/ graduate degrees)	Avg of Explicits
3.83	Procurement Planning		**4.6**	**2.9**	**3.1**	**2.7**	**2.2**	***2.66***
3.88	Solicitation Planning	**4.1**	**4.7**	**2.9**	**2.8**	**2.4**	**2.1**	***2.43***
3.98	Solicitation Creation	**4.5**	**4.6**	**2.9**	**2.5**	**2.3**	**2.0**	***2.29***
3.96	Source Selection	**4.3**	**4.5**	**3.1**	**2.9**	**2.9**	**2.5**	***2.75***
3.81	Contract Administration	**4.1**	**4.4**	**2.9**	**3.1**	**2.5**	**2.2**	***2.61***
3.66	Contract Closeout	**4.0**	**4.1**	**2.9**	**2.5**	**2.4**	**1.9**	***2.27***

Examining each phase separately from one another, we can see the previous statement in further detail. In the procurement planning phase, 33% of respondents gave both OJT and peers/coworkers a 5 out of 5 for being the most helpful source of knowledge. Only one person rated DAU training as the most helpful in procurement planning. The tacit knowledge sources accounted for 94% of all the 5s that respondents gave. As previously stated, the respondents to the questionnaire in Table 4 were asked to give a score for each source of knowledge on a scale from 1 to 5 to indicate how useful each source of knowledge was to them. A rank of 1 meant it was the least amount of help, and a rank of 5 meant it was one of the most helpful sources of knowledge. Table 7 shows the percentages of respondents from Alpha, Bravo, and the NPS who rated each source of knowledge as only as "the most helpful."

Table 7. Knowledge Source Table Results of Most Useful Rankings

	On-the-job training	Peers, coworkers, contracting officer	Mentoring	Online knowledge tools (Google, Ask a Professor, FAR, ACQuipedia, etc.)	Formal contracting training (DAU courses, agency-specific acquisition education)	Education (undergraduate/ graduate degrees)
Procurement Planning	33%	33%	0%	0%	5%	0%
Solicitation Planning	38%	50%	0%	0%	0%	0%
Solicitation	33%	44%	5%	0%	0%	0%
Source Selection	33%	38%	5%	0%	0%	0%
Contract Administration	44%	44%	5%	0%	0%	0%
Contract Closeout	33%	33%	5%	0%	0%	0%

Note: Each respondent can give the "most helpful"/5-out-of-5 ranking to multiple sources of knowledge, thus not making any row or column equal to 100%.

According to the interviews and questionnaires we received, tacit knowledge is the preferred type of knowledge workers rely on to do their jobs. Tacit knowledge was by far the most widely used and most valuable kind of knowledge to the interviewees. Some stated it was "invaluable" knowledge to them. Others stated that a majority of the formal education through sources like DAU were not viewed as training sources they would rely on to help them in their jobs. This thought may be traced back to what the DoD Inspector General (DoDIG) found as a systematic issue (Department of Defense Office of Inspector General, 2012). The DoDIG found that the DAU inadequately trained its own personnel. Despite this, many commanders view DAU training as an end unto itself, rather than as a supplement to other forms of contracting training. The interviewees related that much of what they learned in DAU courses was not applicable to their day-to-day work. Although interviewees might be DAWIA certified Level I or Level II in contracting, they did not feel this translated directly to more effective mission accomplishment. Electronic training was viewed as esoteric and inapplicable to the interviewees' jobs. This seems to have severely dampened the effectiveness of DAU training and therefore the perception of the DAU as a valuable source of knowledge.

Tables 8, 9, and 10 place the previously discussed sources of knowledge into two categories: tacit knowledge and explicit knowledge. We then take all the rankings given to each source of knowledge and provide a mean average for each. All the results are shown in the Tables 8, 9, and 10.

Table 8. Usefulness of Sources of Knowledge for Organization Alpha

Source of knowledge relied on	Type	Usefulness*(mean average of responses)
On-the-job training	Tacit	4.167
Peers, contracting officer	Tacit	4.443
Mentoring	Tacit	3.833
Online knowledge tools (Google, ask a prof, the FAR and FAR supplements)	Explicit	2.867
Formal training (DAU in residence)	Explicit	2.833
Education (to include undergraduate and graduate education)	Explicit	2.133

*Usefulness rating: 1 = least useful, 5 = most useful

Table 9. Usefulness of Sources of Knowledge for Organization Bravo

Source of knowledge relied on	Type	Usefulness* (mean average of responses)
On-the-job training	Tacit	3.83
Peers, contracting officer	Tacit	4.50
Mentoring	Tacit	2.00
Online knowledge tools (Google, ask a prof, the FAR and FAR supplements)	Explicit	2.75
Formal training (DAU in residence)	Explicit	2.58
Education (undergraduate and graduate)	Explicit	2.00

*Usefulness rating: 1 = least useful, 5 = most useful

Table 10. Usefulness of Sources of Knowledge for NPS Students

Source of knowledge relied upon	Type	Usefulness* (mean average of responses)
On-the-job Training	Tacit	4.50
Peers, contracting officer	Tacit	4.47
Mentoring	Tacit	2.94
Online knowledge tools (Google, ask a prof, the FAR and FAR supplements)	Explicit	2.83
Formal training (DAU in residence)	Explicit	2.19
Education (undergraduate and graduate)	Explicit	2.31

*Usefulness rating: 1 = least useful, 5 = most useful

Taking the same data one step further in Figure 7, we compared how the tacit and explicit sources of knowledge compared to each other in each phase of contracting. Contracting personnel can rely on two types of knowledge in the everyday execution of contract actions. But each of the six phases of contracting has various sources of knowledge that can be helpful. The chart below shows each phase of contracting and how much weight is placed on tacit and explicit knowledge by interviewees from Alpha, Bravo, and the NPS. The *x*-axis corresponds with each phase of contracting procurement planning (PP), solicitation planning (SP), solicitation (S), source selection (SS), contract administration (CA), and contract closeout (CC). The *y*-axis is the average of each of the surveys (Table 2) that we received.

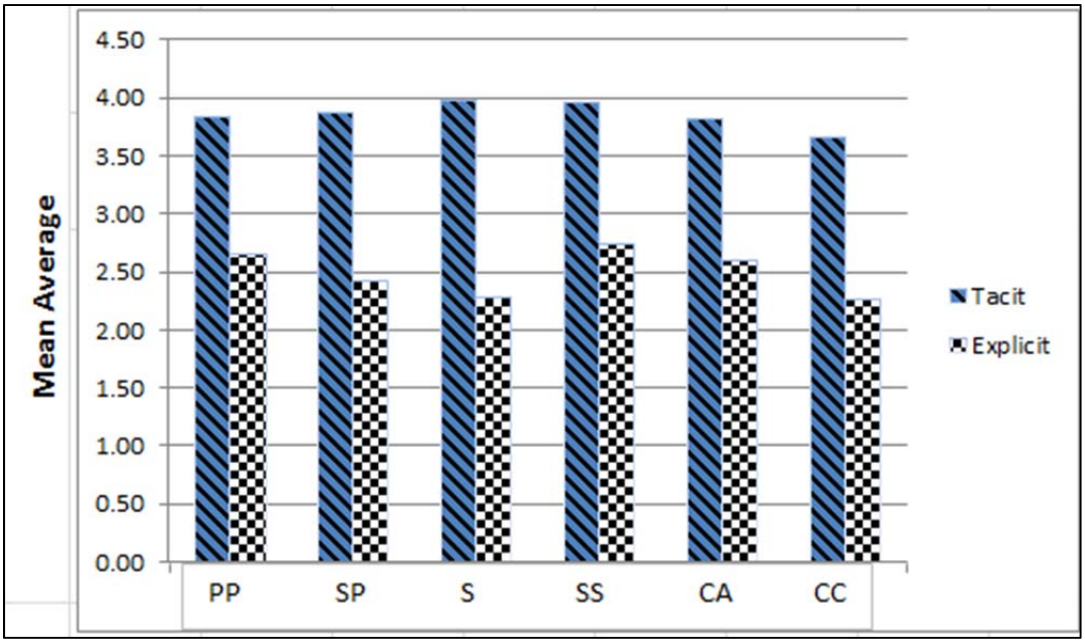

Figure 7. Explicit and Tacit Knowledge in the Six Phases of Contracting

The average tacit knowledge rating resulting from the surveys was much higher than the explicit knowledge rating across all who participated in the surveys. The usefulness rating for tacit knowledge averaged 3.85, and the usefulness rating for explicit knowledge averaged 2.50. These results show that contracting professionals place a great deal of faith in the tacit knowledge that is required for them to progress in this career field. Also, when it comes to actually writing contracts, tacit knowledge is the most reliable and sought-after information.

In their NPS thesis, Derek Aufderheide, Michael Corrigan, and Jeremy Maloy (2011) discussed the issue of a "knowledge gap" between tacit and explicit knowledge. Pfeffer and Sutton's (2000) work, which Aufderheide et al. (2011) referenced in this thesis, referred to the knowledge gap between tacit know-how and explicit know-what as the "knowing-doing gap." This gap must be filled in order to cultivate and mature the very young acquisition workforce because the knowledgeable personnel that the DoD has educated is leaving as they become retirement eligible (see Figure 8; DAU, 2007). The DAU has grown to meet the increased demands placed on it by the executive branch's goals to grow the acquisition workforce (DoD, 2009). The DoD is placing a tremendous amounts of time, money, and effort into an arena that experienced personnel do not find as helpful. Some of the

interviewees suggested getting rid of the DAU altogether. One issue people had is the fact that a vast majority of their classes are online. Many view online classes as an ineffective way of training personnel; telling people to click through something on a computer while sitting at work is not the best way to train personnel.

Our research has shown that cultivating the tacit knowledge of experienced personnel and disseminating it throughout organizations is most beneficial in operational contracting. Explicit knowledge sources such as DAU were often seen as difficult to access or inapplicable to the work being performed. In addition, the Aufderheide thesis showed that training provided by DAU courses is largely geared toward major systems acquisition and did not focus on contracting proficiencies that were performed in operational contracting or in the execution of SAPs (Aufderheide et al., 2011).

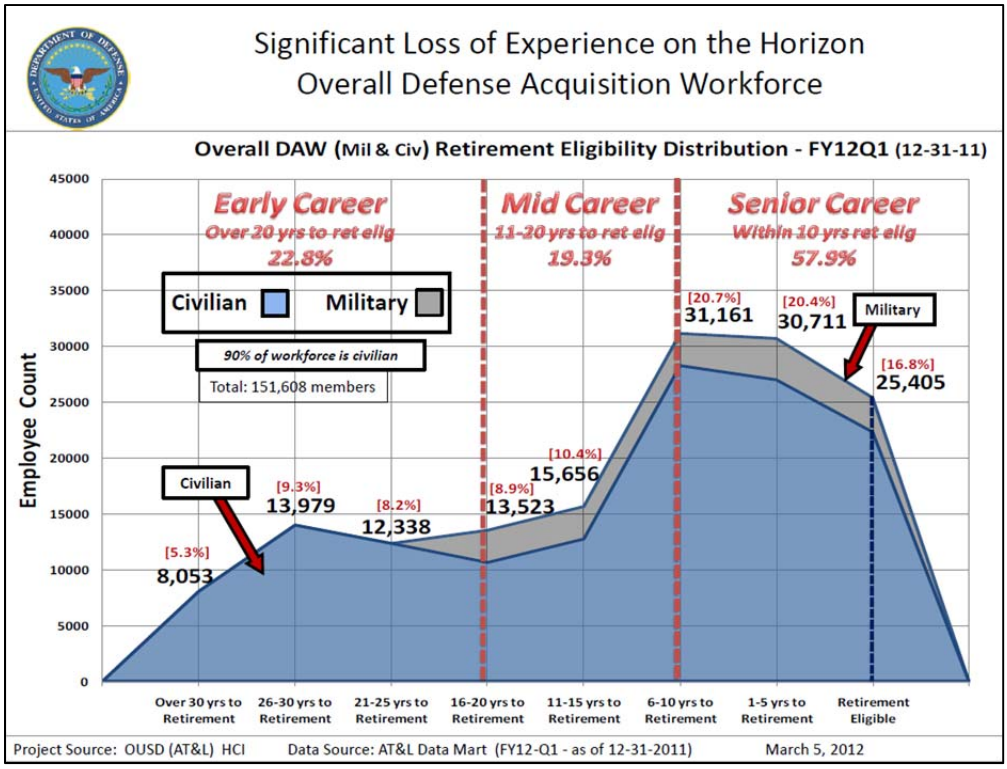

Figure 8. Loss of Acquisition Workforce
(USD[AT&L], 2012)

D. INTERACTION WITH CUSTOMERS

When asked how often each specialist in Organization Alpha dealt with the customers, interviewees did not give answers with a great deal of variation. A majority of the specialists said that they had little interaction with the customers, unless there was a problem with acquiring the good or service in question or they needed to make clarifications on the requirement. The same cannot be said for Organization Bravo, where there was constant interaction with the customer, not because the requirements were complex, but, according to the interviews, because the requirements packages were so often filled with mistakes. The contract specialists constantly had to go back and request data that should have been included in the requirements package when initially submitted to the contracting office for procurement. How do customers know how to submit proper purchase request packages? The contracting office shows them how to do this through training sessions, communication, and mostly standing firm on what is required and accepting nothing less.

Even a well-established contracting office, such as Organization Alpha, still had to remind the customers about proper procedures. For example, one contracting officer mentioned in the interview that one of the larger organizations that their office provided contracting support for was known for submitting incomplete requirements packages to the contracting office with little to no documentation and were frequently corrected on proper procedures. The organization that the contracting officer was referring to was one of the newer organizations on the installation, and it did not yet have a person to evaluate the requirement to see if it was completely properly before it reached the contracting office. Organization Alpha does have a customer handbook that everyone on the installation can access online when he or she has a question on the contracting process. Personnel also have accomplished training sessions with the customers on the installation on how to submit proper requirements packages. Organization Bravo has not been able to accomplish these steps yet. When specialists are constantly training its customers on how to do things right, the knowledge management function has broken down. A lack of knowledge management in this area does a disservice to every stakeholder in the acquisition loop by not executing simple functions as efficiently as possible and should be addressed by management.

According to the GAO (2002a), the strategic approach to purchasing that leading companies take relies heavily on proper knowledge management to include knowledge on spending, communication to foster success, metrics to measure success, and a supporting management team. Taking a strategic approach to acquisition is a best practice. Proper knowledge management feeds directly into this approach as shown in Figure 9. It is a necessity if an organization is to ensure that contracting is operating as effectively as possible.

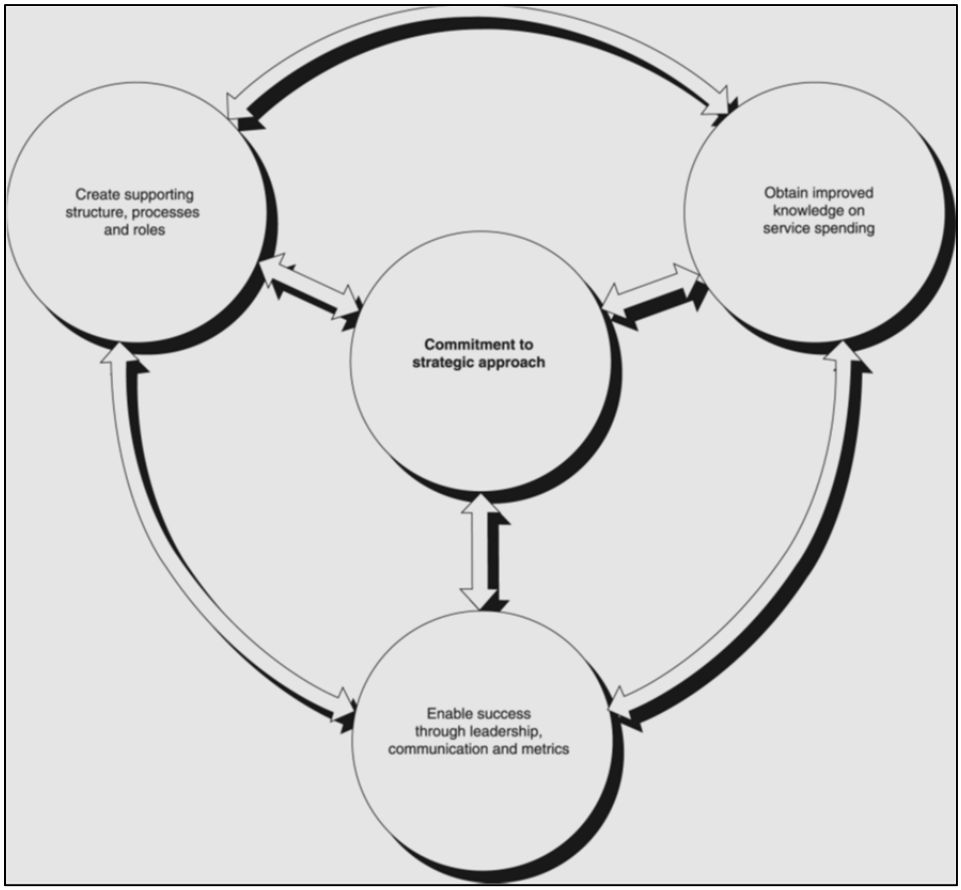

Figure 9. Key Elements of Strategic Approach Taken by Leading Companies (GAO, 2002a)

E. MEASURING PERFORMANCE

One thing that each contract specialist at Organization Alpha had in common with each other is that hardly any of them knew how performance was measured in the organization. Not one person mentioned saving money, smart negotiation techniques, strategic sourcing of requirements, utilizing different contract types, or simply being good stewards of the taxpayer's dollar. However, they all mentioned "this thing called PALT." No one knew what it stood for, but they had an idea of what it was: some kind of suspense date for each contract action. They all agreed that as long as the customer didn't complain, it meant they were doing a good job. There was no real concrete way to judge whether a person was doing "a good job." PALT stands for *procurement administrative lead time*. The definition of PALT varies between organizations, but it usually refers to the time between

when the contracting office accepts the fully completed requirements package and when the actual award is made.

On the other hand, Organization Bravo showed some confusion on the topic. Every person had a different definition of how performance was measured. They each were adamant that they were correct. Answers ranged from lack of customer complaints to competence in one's contracting position, to the number of contract actions completed, to not being measured at all. This is a key issue in knowledge management. How can employees truly succeed in the eyes of management if they do not know what they should be striving towards? If no one knows what the expectations are for the group, the goals for that organization will be difficult to meet.

F. TRAINING OF NEW PERSONNEL

There is a tendency for all contract specialists and contracting officers to become hoarders of templates, forms, and spreadsheets. Each seasoned contracting professional has his or her own personal database that grows with every new duty location or assignment. These personal databases grow only from borrowing documents from other people's databases, and soon everyone in the office is using different forms and procedures to do the same task. If universal policies, forms, and procedures aren't established up front with proper training and education, it can cause havoc down the road and keep simplified acquisitions from being truly simple. Neither organization has a 100% standard on using certain forms and documents, but Organization Alpha is much more standardized than Organization Bravo. Alpha has standardized templates and an office-wide Microsoft Access database used to check the status of contract actions, but the templates are not widely disseminated, and the database is not used by all personnel. The standardization of their templates can be attributed to the length of time the organization has been around. Organization Alpha reinstituted a policy within the last year that all new personnel are issued a trainer for their first year working in the unit. The trainers were the more senior contract specialists in the flight. They served as the primary source of knowledge for ne contracting specialists. They were an important source of tacit knowledge for these new hires, and, according to the interviews, trainees view them as very helpful.

Organization Bravo did not have assigned trainers, but new personnel aren't "thrown into the fire" when they arrive into the organization either. One interviewee related that when a new hire was so overwhelmed about what he had to do on new contract actions he just sat on them for weeks and didn't do anything on the requirement for one month. The interviewee stated, "They didn't know anything about it and [didn't] want to ask."

The dissemination of knowledge of a career field that is predicated on knowledge bases that are so fluid is a very difficult undertaking. Nissen and Rendon (in press) described the acquisition field as a very dynamic and knowledge-intensive career field. The FAR, the DFARS, and other federal agency supplements of the FAR, the Uniform Commercial Code (UCC), installation guidelines, and other rules, regulations, and requirements all need to be obeyed, even though they all change frequently. Nissen and Rendon (2012) stated that this environment requires members "to sustain career-long learning and knowledge development just to remain proficient as acquisition professionals." Knowledge in government acquisition is not a static resource but one that constantly evolves as regulations and the procurement process increase in complexity.

G. SUMMARY

Acquisition and contracting are very knowledge-intensive disciplines that require continuous education and training in order to maintain proficiency and expert power. Understanding how knowledge flows is of particular importance in ensuring that personnel are exposed to and absorb the skills and knowledge necessary to perform their duties. In addition to the myriad of laws, we discussed the governing federal acquisition and the dynamic nature of those regulations. Success in this field relies heavily on the flow of information because there are frequent changes to the regulations that contracting professionals need to follow. Nissen (2012) stated in his study on knowledge flows that the understanding of the power of knowledge enables and gives a competitive advantage and that "problem is, knowledge is not distributed evenly through most organizations; it clumps perennially in particular people, organizations, places and times" (p.1). Proper education and training of all personnel is essential. It must be a priority, especially for newer organizations when establishing standardized procedures and laying the foundation for their contract authority.

Our research has shown that the most important sources of knowledge to contracting personnel are those tacit types of knowledge such as OJT and the knowledge passed on from fellow co-workers and peers. These are the types of knowledge that are consistently sought out and heavily relied upon. We also found that the efficiency of knowledge distribution both within, and to other organizations is one indication of the efficacy of the contracting processes; and that proper knowledge management feeds directly into the strategic approach to acquisition practiced by many successful firms.

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V. CONCLUSIONS AND AREAS FOR FURTHER RESEARCH

A. SUMMARY

The federal acquisition workforce has shrunk appreciably since the apex of the Cold War and will continue to do so as experienced and knowledgeable contracting personnel approach retirement. This exodus of knowledge, coupled with the increasing complexity of acquisitions and burgeoning defense budgets, has led to the dichotomous expectation of doing more with less. Although hiring initiatives are bringing on new personnel in an effort to grow the acquisition workforce, there is little concerted consideration being given to the comprehensive knowledge development of these hires. SAPs comprise the vast majority of contract actions and are widely considered to be the bread and butter of contracting. Because of their simplicity and ubiquity, SAPs are the likely first task for a new contracting hire. Despite this, organizations often fail to initiate or promulgate the development and maintenance of a knowledge management system to support the execution of SAPs. In failing to do so, the full benefits of an organization's knowledge, both tacit and explicit, cannot be efficiently disseminated, accessed, and utilized by its employees. Because of the influx of new hires, it is more important than ever that individual contracting professionals be made more effective by having access to relevant knowledge from a variety of sources and that this knowledge can serve as an enduring source of continuity. A developed and properly disseminated knowledge management system for SAPs can serve as a potent force-multiplier within a contracting organization; enabling a relative few inexperienced new hires to do work beyond their initial capabilities.

B. CONCLUSIONS

In Chapter I, we stated our research questions were the following:

- How can procurements using SAPs be executed more effectively using knowledge management?
- What is knowledge? What is knowledge management?
- What are typical sources of knowledge in a contracting organization?

- What sources of knowledge are preferred by contracting personnel?

Our research showed through interviews, data collection, and analysis that a developed and properly disseminated knowledge management system can serve as a potent force-multiplier in a contracting organization's execution of SAPs. Contracting personnel value access to contracting knowledge which is easily accessible and relevant to their day-to-day jobs. Promoting access to this knowledge through a developed knowledge management system can be an important part in developing experienced and capable contracting personnel and, in turn, executing contracts more expeditiously and sagaciously. A knowledge management system for SAPs will allow new hires to be more effective and to perform work beyond their initial abilities. It will also serve to streamline their development into more capable and competent contracting professionals.

Our review of literature showed that knowledge is a fluid mix of framed experiences, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information (Hawryszkiewycz, 2010). Knowledge management, as defined by McNabb (2007), is a set of processes, practices, and philosophies to make available the knowledge that enables agencies to be more proficient and competitive in the delivery of public services.

We have shown that the typical sources of knowledge in a contracting organization include OJT, peers, mentoring, DAU courses, and online tools, and formal education. Contracting organizations have access to a wide range of knowledge sources across the spectrum of tacit and explicit types. Our interviews and surveys of contracting personnel showed that these sources of knowledge can be available in many different organizations but can be utilized to various degrees. Some, such as mentoring programs, are established on the volition of the individual contracting organizations while others, such as DAU, are available to all. Whether or not a knowledge source is available or used seems largely dependent upon organizational culture and preferences rather than access.

Our results have shown that tacit knowledge is relied on the most heavily and is preferred by both fledgling and seasoned contracting personnel. Peers, OJT, and mentoring were seen as the most helpful and accessible knowledge sources. Unfortunately, even though

they are preferred, these sources of knowledge are not heavily emphasized by the contracting organizations we researched. Explicit knowledge sources, while seen as useful, were second to tacit knowledge in all areas. Contracting personnel conclusively prefer tacit knowledge when seeking help or advice in contracting.

C. RECOMMENDATIONS

Based on these results, we have the following recommendations for contracting offices to use knowledge management to effectively execute SAPs. The first is to develop a formal contracting mentoring program that can be used to provide new hires with access to contracting knowledge while they develop their own skills, abilities, and knowledge. Mentoring, as defined in our questionnaires, did not score very high; but if it is combined with OJT and other forms of organizational training, it can serve as a potent tool for educating nascent contracting personnel while also maintaining the proficiency of experienced ones. The next recommendation we have is to establish standardized checklists and templates for personnel to use, as well as standardizing the procedures for customers to submit requirements packages. A lack of standardization hampers the dissemination of contracting knowledge. Our final, recommendation is that contracting leadership cannot rely solely on the DAU to train their personnel and must be proactive in establishing and fostering training programs within their own organizations. The best source of knowledge is the accumulated experience of contracting personnel within an organization and in-house training and standardization must be a priority to effectively execute the contracting mission.

D. FURTHER RESEARCH

Our recommendations for future research would be a concerted analysis of how to develop a knowledge management system for executing SAPs that can be implemented universally in contracting functions and commands. This analysis would be a holistic review of the electronic databases, available DAU training, mentoring programs, standardized templates, and other sources of knowledge related to SAPs that can be leveraged to create a comprehensive knowledge management system. Once developed, this system can be used to develop the expertise and skills of new hires and other inexperienced personnel from day one while serving to maintain and enhance the abilities of more experienced personnel.

Another area for research would be the creation of a mathematical formula that could predict a contract's PALT based on the factors examined in this research. This formula would include quantitative measurements of the experience of the personnel, education, complexity of the requirement and other factors which might influence the time and effort needed to execute a contract. Open access to knowledge and the presence, or absence of a developed knowledge management system can also be included as a factor for timely contract execution. This research can be expanded to other agencies and branches of DoD.

APPENDIX

A. INTERVIEW QUESTIONS

- For which organizations did you provide contracting support?
- What is the annual spend data below and above the SAT?
- General description of organization (including size, experience, military to civilian ratio etc.)
- What would happen if one of your knowledge centers left the organization for an undetermined period of time?
- What strategic steps do you take to for upcoming potential contract actions?
- Please tell us about the education, training and experience that enable your professional competence, and kindly indicate any additional education, training or experience that you would like to add.
    - When did you get these certifications?
    - Do you have a warrant?
- How is your sub-organization structured, and what is your role?
- Can you walk us through a typical commodities purchase?
- Which people and other information sources do you go to for questions concerning your contract actions?
- How is performance measured in your organization?

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