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AN ANALYSIS OF COMMUNICATION BETWEEN PROGRAM MANAGERS AND CONTRACTING OFFICERS AND ITS EFFECT ON THE PERFORMANCE OF THE DEFENSE ACQUISITION SYSTEM

September 2015

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The purpose of this research is to investigate the effects of early communication between program managers and contracting officers on the performance of the Defense Acquisition System. To show the need for improvement and to determine problem areas affecting early communication, we used mixed methods' research to examine current statistics and to conduct in-person interviews. With this research, we found a link between the quality and quantity of communications and the outcome of the program. Communication and program outcomes are linked through contracting products, which are a primary driver of program performance, and are significantly improved by effective and continuous communication. The primary method that significantly affected the quality of communication was to embed the contracting officer within the program office. In cases where this was not possible, it was necessary to align the contracting team organizationally with the requiring activity.

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AN ANALYSIS OF COMMUNICATION BETWEEN PROGRAM MANAGERS AND CONTRACTING OFFICERS AND ITS EFFECT ON THE PERFORMANCE OF THE DEFENSE ACQUISITION SYSTEM

ABSTRACT

The purpose of this research is to investigate the effects of early communication between program managers and contracting officers on the performance of the Defense Acquisition System. To show the need for improvement and to determine problem areas affecting early communication, we used mixed methods' research to examine current statistics and to conduct in-person interviews. With this research, we found a link between the quality and quantity of communications and the outcome of the program. Communication and program outcomes are linked through contracting products, which are a primary driver of program performance, and are significantly improved by effective and continuous communication. The primary method that significantly affected the quality of communication was to embed the contracting officer within the program office. In cases where this was not possible, it was necessary to align the contracting team organizationally with the requiring activity.

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LIST OF ACRONYMS AND ABBREVIATIONS

ACC   Army Contracting Command
ACC – APG   Army Contracting Command – Aberdeen Proving Ground
ACC – RI   Army Contracting Command – Rock Island
APB   acquisition program baseline
ARP   acquisition requirements package
AS   acquisition strategy

BBP   Better Buying Power

CAA   Civilian Agency Acquisition
CECOM   Communication Electronics Command
CPI   continuous process improvement
CPFF   cost plus fixed fee

DAMS   Defense Acquisition Management System
DAR   Defense Acquisition Regulations
DAS   Defense Acquisition System
DAU   Defense Acquisition University
DFARS   Defense Federal Acquisition Regulation Supplement
DOD   Department of Defense
DODD   Department of Defense directive
DODI   Department of Defense instruction

ERP   enterprise resource planning

FAR   Federal Acquisition Regulation
FFP   firm fixed price
FPDS-NG   Federal Procurement Data System – next generation
FY   fiscal year

GAO   Government Accountability Office
GSA   General Services Administration

HOQ   house of quality

IPA   interpretive phenomenological analysis
IPR   in-progress review
IPT   Integrated Product Team
IS   information system

KO   contracting officer

LOG IT	logistics information technology
LPTA	lowest price technically acceptable
MDA	milestone decision authority
MDAP	major defense acquisition program
MRAP	Mine-Resistant Ambush Protected
NASA	National Aeronautics and Space Administration
NCRCC	National Capital Region Contracting Center
OSD	Office of the Secretary of Defense
PARCA	Performance Assessments and Root Cause Analysis
PAUC	program acquisition unit cost
PBUSE	Property Book Unit Supply Enhanced
PD	product director
PD^2	Procurement Defense Desktop
PEO	program executive office
PEO-EIS	Program Executive Office, Enterprise Information System
PM	program manager
PMSS	program management system support
QFD	quality function deployment
RFP	request for proposal
SEC	Software Engineering Center
SEC-TLD	Software Engineering Center, Tactical Logistics Directorate
SF	standard form
SME	subject matter expert
SPS	Standard Procurement System
TIPS	Three Integrative Pillars of Success
T&M	time and materials
ULLS-AE	Unit Level Logistics System-Aviation (Enhanced)
USD (AT&L)	Under Secretary of Defense, Acquisition, Technology and Logistics
WSARA	Weapons System Acquisition Reform Act

EXECUTIVE SUMMARY

Despite initiatives focused toward acquisition reform through the reduction and simplification of acquisition policy and regulation, acquisition programs and projects continue to flounder, incurring cost and schedule overruns and experiencing acquisition program baseline (APB) breaches. A major contributor to these failures is the acquisition community's inability to work collaboratively in understanding requirements and to translate those requirements into effective contracts. Program/project managers and their staffs are trained in acquisition policy and fiscal law, and their focus is on obtaining a contract that satisfies requirements and delivers a product or capability on time and within budget. The contracting community being trained in acquisition policy, fiscal law, and contracting law focuses its efforts on awarding legal and binding contracts that represent best value for the government, but not necessarily satisfying the customer's requirements and not always in a timely manner. As an example, Michael Loya, one of the authors/researchers, shares his real-world personal experience where it took more than 21 months to work through the process of documenting the requirements, soliciting proposals, and awarding of a contract to support the sustainment of an information technology system. His anecdotal evidence shows that communication and collaboration between the contracting officer (KO) and the product director (PD) did not exist. This disparity and lack of collaborative focus resulted in two contract extensions at a cost of $5.2M before the award of the new contract, which cost $3M (W. Sarvay, personal communications, August 19, 2015).

The focus of this project is to determine how the program management community and the contracting community can work in a more collaborative fashion, resulting in the award of a legal contract that satisfies customer requirements and delivers a product on time and within budget. We investigated how the program manager (PM) and the contracting officer (KO) work together within the framework of Defense Acquisition System, how they are trained, and how the constraints of the FAR, DOD 5000 Series and other regulatory guidance impact their ability to operate.

Our approach to the conduct of this research included a detailed literature review of the Federal Acquisition Regulation, (FAR Part 1 and Part 7), Defense Federal Acquisition Regulation Supplement, and DOD 5000.01, DODI 5000.02 Series. In addition, we reviewed the 2013 and 2014 Performance of the Defense Acquisition System reports where we gleaned relevant statistical data that identified markers of success/failure and the effects that consistent communication and collaboration has on them. Finally, we reviewed Better Buying Power (BBP) 3.0 (OUSD[AT&L], 2015, pp. 1–33), where findings show that there was no consideration given in the tenants of BBP 3.0 where communication and collaboration between the PM and KO would be encouraged.

Next, we applied a mixed methods strategy to our research; collecting both quantative and qualitative data sources. We used quantitative data for the purpose of demonstrating current and past performance of the Defense Acquisition System with respect to cost, schedule, and performance. The qualitative data that we collected through interviews with acquisition professionals captured what was actually happening in PM offices and contracting shops and provided insight to the extent that the two organizations communicate. We chose a communication model, depicting basic communication principles and overlaid that with the Three Integrative Pillars of Success (TIPS) (Yoder, 2010) model to describe communication in an environment encompassing several aspects for success. Our data analysis identified data points that, coupled with our literature review, were compared with the communications and TIPS model. From this comparison, we identified common themes related to early and consistent communications between the PM and KO and how these themes affected performance of the Defense Acquisition System (DAS).

We concluded that there were five top common themes affecting performance of the DAS:

1. **ARP Collaboration** – The ARP and all associated documentation must be developed collaboratively between the PM and KO to ensure accurate requirements are captured and procurable. Our research found that acquisitions utilizing non-embedded contracting professionals experienced a high rate of ARP rejection.

2.   Contract Type – Interviews revealed several cases where an appropriate contract type was bilaterally selected between the PM and KO only to be rejected by the KO's approving authority or higher headquarters. Instances were cited where often external pressures from headquarters and others would influence the selection of contract type; and the existence of an environment of conformance often time would pressure PMs and KOs to use whatever contract type is currently in favor, to the extent that it even may become linked to the career progression of these individuals.

3.   **Effective Communication** – Our research found that when contracting professionals are embedded in the program office, communication and collaboration activities were much more prevalent. If this is not possible, the contracting team must be customer-aligned, meaning that they are assigned to a single requiring activity.

4.   **Policy** – We uncovered that a common view is that laws and regulations are restrictive in nature; meaning that unless something is expressly allowed in writing then it is prohibited and the system becomes extremely slow and burdensome.

5.   **Process** – Our research found that the lack of an enterprise type system for the PM and KO to connect all functional areas, such as financial, logistics, requirements, contracting, security, etc., impedes the flow of information both up the chain of command for reporting purposes and across organizations for increased communication capabilities.

In order to improve the performance of the DAS, we presented recommendations that address each theme in the same order and based on the models we used in this research:

1.   To improve ARP collaboration, internal protocols should be established that define how ARPs, SOWs, etc., will be developed collaboratively between the PM and KO.

2.   Empower the KO to use their warranted authority to select the appropriate contract that best supports the requirements.

3.   Establish effective communication and collaboration by physically co-locating the contracting team with the PM or at a minimum customer-align the contracting to support the PM.

4.   Educate the acquisition community and leadership of the permissive nature of the laws and regulations. Without the freedom to make decisions consistent with the intent of the FAR, the system remains paralyzed.

5.   Develop and deploy an Enterprise Resource Planning system that connects the acquisition community to achieve workflow optimization and provide information sharing.

We end this research with a recommendation of further study in three distinct areas. First, to ensure our findings are truly representative of the larger acquisition community we feel it would be prudent to repeat this research with a much larger sampling of acquisition professionals. Second, an opportunity exists to investigate how frequently and why a KO's determination of the type contract used for an acquisition can be unilaterally overturned based on outside or uninvolved influence. Finally, we feel that it would be beneficial to study the possibility of adding a communications tenant to the next iteration of Better Buying Power as improvement in this area will provide critical support to the overall goals of the initiative.

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Yoder, E. C. (2010). Phase zero operations for contingency and expeditionary contracting—Keys to fully integrating contracting into operational planning and execution (Report No. NPS-CM-10-160). Retrieved from http://www.acquisitionresearch.net/files/FY2010/NPS-CM-10-160.pdf

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I. INTRODUCTION

A. OVERVIEW

The objective of this research is to determine how early and consistent communication between the program manager (PM) and contracting officer (KO) affects, either positively or negatively, the success rates of Army acquisition programs. Programs continue to fail at a high rate. How do we quantify program failure? In the acquisition community, the definition of a measure of program success is the capability of delivering to the soldier, on time and within budget, satisfying user requirements, and is suitable, survivable, and maintainable. Measuring program failure can be considered ambiguous. According to J. Dillard, Senior Lecturer, Naval Postgraduate School (personal communication, August 15, 2015), failure has some tangible and intangible measures. For instance, in the case of the Javelin program from a cost and schedule perspective, "Javelin was a programmatic failure in development but a capability success once in production" (J. Dillard, personal communication, August 15, 2015).

A perceived contributor to program failures is the acquisition community's inability to work collaboratively to understand requirements and to translate those requirements into effective contracts, despite all the tools and guidance available to make them successful. During a June 2015 interview by *Army AL&T* magazine, Cedric T. Wins, director of the Army Capabilities Integration Center (ARCIC) Requirements Integration Directorate, underscores the importance of communication and collaboration throughout the acquisition life cycle. "Wins also discussed … the importance of involving the acquisition workforce in the requirements process, 'to ensure that we have some of [the acquisition community's] best and brightest come and spend a little time on the operational side.' Thus, each side can learn from the other, and both can better understand how a decision made early in the requirements process affects the acquisition community later" ("From concept to delivery," 2015, p. 14). In Krieger's *Knowing and Loving Your KO*, he shares the results of a study of program manager training and experience, conducted by the Office of the Secretary of Defense (OSD), where "program managers gave high marks to their acquisition training concerning 'Contracting

Challenges.' But, personal one-on-one interviews with Program Executive Officers and Program Managers caveated that by indicating they were concerned about how to communicate, and get along with, their Contracting Officers (KOs)." (Krieger, 2011, p. 40)

This chapter provides a discussion of the approach followed in conducting this research, which determined how early and continuous communication between the PM and KO impacts the success rates of Army acquisition programs. Background information delineates the responsibilities of the PM and the KO, as well as the communication process that they must follow to ensure a successful acquisition. The methodology outlined in Section D of this chapter describes the multifaceted approach followed to examine the contract writing process from the perspective of key functional areas, the program manager and the contracting officer, as well as a combined view of the entire process. This methodology assisted us in achieving our research objective and answering our primary research question in Section E: To what degree does early and ongoing communication between the program manager and contracting officer impact the success or failure of Army acquisition programs? Section F of this chapter addresses how this research is organized and how we present our findings. Finally, we end this chapter by describing the benefits gleaned from this research: Increased communication and collaboration between the PM and KO will create an environment that encourages greater partnership between the two groups throughout the acquisition life cycle and enhances the chances of a successful acquisition.

B.   BACKGROUND

1.   Responsibilities

Program manager (PM) – The PM is the "designated individual with the responsibility for and authority to accomplish program objectives for the development, production, and sustainment to meet the user's operational needs" (Nash, O'Brien-DeBakey, & Schooner, 2013, p. 402). The PM manages the system acquisition and as indicated by Engelbeck (2002) is responsible for developing acquisition strategies that promote full and open competition. If the PM chooses to develop the acquisition strategy

without involving the KO, gaining the KO's buy-in will be much longer and ultimately affect the timeline of the acquisition. Engelbeck describes the PM as the one tasked to "discipline the acquisition process and establish a climate and communication protocol that will ensure that the entire integrated acquisition team works together" (2002, p. 46). Following this logic, if it is successful, a collaborative relationship between the PM and KO will be formed and the development of the acquisition strategy will be a coordinated effort resulting in buy-in throughout the process.

Contracting officer (KO) – The contracting community is trained in acquisition policy, fiscal law, and contracting law. The KO focuses efforts on awarding legal and binding contracts that represent best-value for the government while at the same time satisfying the customers' requirements. In *The government contracts reference book* authors, Nash, O'Brien-DeBakey, and Schooner (2013), describe the contracting officer (KO) as "the government employee with the authority to legally bind the government by signing a contract" (as cited by Engelbeck, 2002, p. 47). In conformance with Federal Acquisition Regulation Subpart 1.6, Career Development, Contracting Authority, Responsibilities, contracting officers are appointed in writing using Standard Form (SF) 1402 (*Certificate of Appointment)* by the head of the contracting agency or the designated representative. The agency head or the designated representative can stipulate on SF 1402 any limitations to the KO's authority, which will require the KO to conduct business within the parameters set forth in the appointment (Federal Acquisition Regulation, 2015, Subpart 1.6-2).

2. PM/KO Communication

The success of Army acquisitions depends on effective and efficient acquisition planning including collaboration and communication amongst the entire integrated acquisition team. Collaboration between the PM and the KO must begin from the earliest point in the planning process. The Federal Acquisition Regulation (FAR) states the importance of teaming and collaboration/involvement regarding acquisition planning. FAR Part 7.102 (b) states, "This planning shall integrate the efforts of all personnel responsible for significant aspects of the acquisition." (2015) The Department of Defense

directive 5000.01 states that, "acquisition, capability needs, and financial communities, and operational users shall maintain continuous and effective communications with each other by using Integrated Product Teams (IPTs)." (2003, p. 5)

Communication is the process of sharing information that involves one person generating a message to another person or to a group of people with the intent that everyone will have a common understanding of the message. In Chapter 2 (Introduction to the Federal Acquisition Process) of *Acquisition Management*, Engelbeck introduces the "Communication Protocol for the Integrated Acquisition Team" (Anderson, Finkelstein, & Quinn, as cited by Engelbeck, 2002, p. 48). The Communication Protocol for the Integrated Acquisition Team diagram shown in Figure 1 depicts the two-way communication that takes place within the Integrated Acquisition Team to facilitate planning, reporting, and problem solving.

Figure 1.   Communication Protocol for the Integrated Acquisition Team
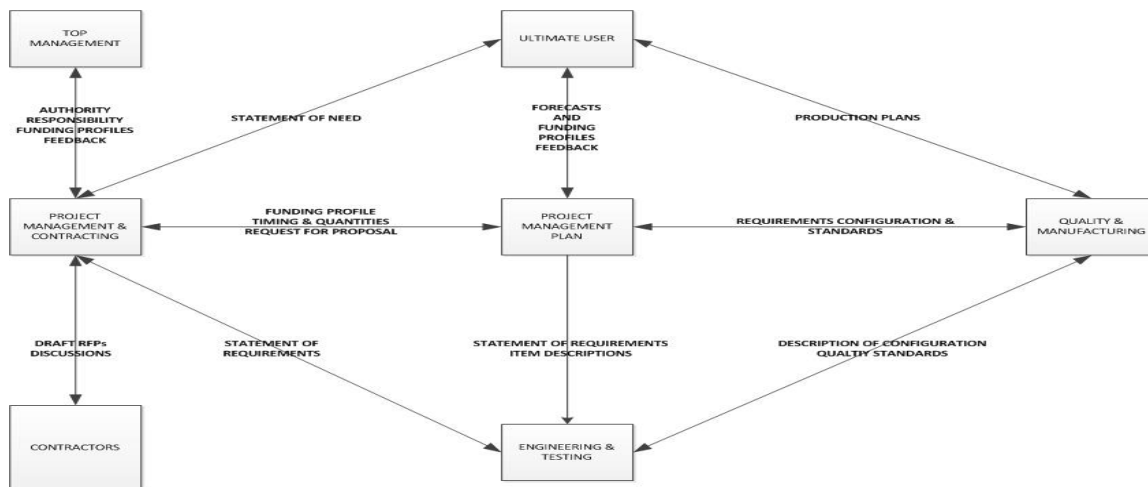
From Engelbeck, R. M. (2002). *Acquisition management.* Vienna, VA: Management Concepts.

The Communication Protocol (Figure 1) supports the premise that early and continuous communication between the PM and the KO will result in program success.

C.   OBJECTIVE OF STUDY

The scope of this analysis considers the issues and constraints surrounding the writing and awarding of contracts following the framework of the Defense Acquisition System (DAS). It also focuses on how program and contract performance are impacted by early and consistent communication between the PM and KO.

Our research achieves the following objectives:

- Addressing how the program manager (PM) and the contracting officer (KO) work together within the framework of the DOD 5000.01 and the FAR

- Determining how well the PM and KO are trained and the level of knowledge each possesses of their own field and that of their counterpart

- Determining the constraints the PM and KO must work in and how those constraints impact communications and collaboration

In achieving these objectives, we determine the extent to which early and consistent communication between the PM and KO helps or hurts the success rates of Army acquisition programs.

D.   METHODOLOGY

This research is an investigative analysis of the Army's process of writing and awarding contracts under the Defense Acquisition System (DAS). We use a multifaceted approach to thoroughly examine the process from the perspective of each key functional area, the program manager and the contracting officer, as well as a combined view of the process as a whole. Methods and models used in this analysis include quantitative and qualitative data sources, Schramm's Overlapping Field of Experience Communication model (Schramm, The Process and Effects of Mass Communication, as cited in Certo, & Certo, 2006, p. 332); and Yoder's Three Integrative Pillars of Success model (TIPS) (Yoder, 2010, p. 42). We detail these methods and models in Chapter III, and we present findings of our data analysis in Chapter IV, which are the result of using these methods and models in the conduct of our research.

Through statistical data we show that in spite of continuing acquisition reform and increasing regulation, there are no shortages of program failures and overruns within the

Department of Defense. This paper identifies critical areas of the acquisition process where due to lack of effort, over-burdensome constraints, or some other cause, a breakdown occurs between program manager's and contracting officer's functions, contributing in-whole or in-part to program acquisition program baseline (APB) breaches or program failures. To determine program failure/breach ties to problems with contracts, data from the office of Performance Assessments and Root Cause Analysis (PARCA) and statistics from Nunn-McCurdy were analyzed. We collected available information on relevant contract specifics such as type, unmeasurable requirements, etc.

First, a thorough review of existing regulatory and guidance documentation provided a picture of how the functions of program manager and contracting officer operate and interact within the Defense Acquisition Management System (DAMS). To quantify the collaboration and communication that is required for success, key documents such as the DOD 5000 Series, Federal Acquisition Regulation (FAR), Defense Federal Acquisition Regulation Supplement (DFARS), as well as several supplementary documents, such as Better Buying Power (BBP), were cross-walked to identify boundary conditions and intersection points. This portion of the analysis answered the question, "At which points in the DAMS is interaction required between the PM and KO," and "Which function is driving the requirement?" This review also highlighted boundary conditions that may limit the flexibility of either functional area, leading to problems writing or awarding a contract.

Second, we conducted in-person interviews with subject matter experts in the functional areas of Program Management and Contracting. Individuals were asked a series of questions relating to their experiences as program manager, contracting officer, or specific supporting staff. Data collected from all interviews was consolidated and synthesized, resulting in the identification of trends, common indicators, and unusual characteristics.

Finally, with the data collected and synthesized, a we made a comparison against the framework outlined by the literature review and a conclusion about whether or not early communication between the functional areas of interest is helpful and whether it is aided or hindered by policy. In order to provide the data needed to support the primary

research question, we obtained answers to the secondary research questions. To gain insight into this complex issue, we considered failure rates, communication issues, and policy.

E.   RESEARCH QUESTIONS

To determine whether communication, or lack thereof, is a root cause of poor contract and program performance, we developed the following research questions:

- **Primary research question:** To what degree does early and ongoing communication between the program manager and contracting officer impact the success or failure of Army acquisition programs?

- **Secondary research question 1:** Are problems with requests for proposals (RFPs) and contracts related to poor communication and collaboration between the KO and PM?

- **Secondary research question 2:** Do current acquisition policy, law, training, and regulation impact the success/failure rates of contract execution?

These questions guided our research, and the answers provided the data necessary to conduct analysis and to determine a conclusion, which we provide in Chapters IV and V.

F.   ORGANIZATION

In Chapter II, we set the conditions for addressing our research topic by conducting a literature review. We review regulatory directives such as the Federal Acquisition Regulation (FAR), Defense Federal Acquisition Regulation Supplement (DFARS), the Department of Defense (DOD) 5000 Series, the Defense Acquisition Guidebook, and Better Buying Power initiatives. Finally, we examine various Government Accountability Office (GAO) reports and Performance Assessments and Root Cause Analysis (PARCA) reports, which address failures in the Army Acquisition Process.

In Chapter III, we identify the methods and models used in conducting data analysis. We selected a mixed methods' approach that included quantitative and qualitative data sources. For the purposes of examining the current and past performance of the Defense Acquisition System, quantitative data was gathered and used to provide

the best insight into the current state of the process with respect to cost, schedule, and performance. To examine the way the Defense Acquisition System works from the perspective of those who operate within it, we gathered qualitative data through interviews with acquisition professionals working in Program Management and Contract Management. We used an interview-data extrapolation model to conduct data analysis with a simple pivot table, displaying the results of that analysis graphically. Finally, we coupled Schramm's communication model (Schramm, The Process and Effects of Mass Communication, as cited in Certo, & Certo, 2006, p. 332) with the Three Integrative Pillars of Success (TIPS). This is at the center of successful communications between the PM and KO to ensure a robust and collaborative environment within the Integrated Acquisition Team tasked with translating requirements into effective contracts.

In Chapter IV, we present the data analysis findings that resulted from using these methods and models. The statistical evidence shows current performance metrics of the Defense Acquisition System. Case studies from the office of PARCA show that contracts are a contributing factor in performance problems with programs. The evidence depicts a system that is making improvements in some areas; it also highlights areas where opportunities exist to make improvements that will benefit program and contract performance. Finally, analysis findings of interview data produced common themes dealing with PM/KO communication; these are evaluated against the TIPS and Schramm's (Schramm, The Process and Effects of Mass Communication, as cited in Certo, & Certo, 2006, p. 332) communications models and compared with the current literature covered in Chapter II to better understand what is working well and what is not.

In Chapter V, we finalize this report, which answers our primary and secondary research questions, provides our recommendations, and presents other topics that could benefit from further research.

G.   BENEFIT

Program managers and contracting officers must possess strong interpersonal skills to foster a collaborative environment early on and throughout the acquisition process. This type of environment contributes to ensuring the award of a legal and

binding contract that is clear and complete, satisfies customer requirements, and provides a positive impact on program and contract performance. The benefit that comes from conducting this research is the identification of those critical moments and events in the acquisition life cycle where increased communication and collaboration between the PM and KO will enhance the chances for success of program and contract performance. The data gathered and analyzed throughout this study provides insight to the environment in which the PM and KO operate and identifies common themes related to early and consistent communications that could affect the rate at which a program or contract either succeeds or fails. Based on our research, analysis, and findings, we present recommendations that encourage greater partnership and collaboration between the two groups and we identify areas of this research that show potential benefit from further research.

H.   SUMMARY

In this chapter we discussed the objective of our research and provided arguments for why communication and collaboration between the PM and KO is so critical to the success of a program. Background information was presented which delineated the responsibilities of the PM and the KO. We identified the reasons for conducting this research and we presented the primary and secondary questions that guided this research. The organization section of this chapter described how our research is structured and how we will present our findings. Finally, we identified the benefits of this research, where increased communication and collaboration between the PM and KO will create an environment that encourages a greater partnership between the two groups throughout the acquisition life cycle and enhance the chances of a successful acquisition. In Chapter II, we provide a literature review of regulatory directives that guide how the Army Acquisition process operates as well as government reports that address challenges and failures in the process.

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II. LITERATURE REVIEW

Chapter I provided a background and basis for this research by explaining the issues and concerns considered contributors that influence the success or failure of Army acquisitions. This chapter focuses on the Federal Acquisition Regulations and regulatory directives such as the Federal Acquisition Regulations (FAR), Defense Federal Acquisition Regulation Supplement (DFARS), Department of Defense (DOD) 5000 Series, and Better Buying Power initiatives—all designed to govern and enable the Army Acquisition process. We examine various Performance Assessments and Root Cause Analysis (PARCA) reports, and we use all this information to aid in the analysis of this research.

A.   FEDERAL ACQUISITION REGULATION SYSTEM

The Federal Acquisition Act of 1977 authorized the implementation of the Federal Acquisition Regulations, forming the basis to codify and publish policy and procedure for acquisitions by all Executive Agencies. The system is comprised of the FAR and agency acquisition regulations such as the DFARS and Department of Defense 5000 Series, which support implementing or supplementing the FAR. Management of the FAR is the joint responsibility of the "Secretary of Defense, the Administrator, General Services Administration [GSA], and the Administrator, [National Aeronautics and Space Administration] NASA." The FAR is revised by a coordinated effort of two councils, "the Defense Acquisition Regulations Council [DAR Council] and the Civilian Agency Acquisition Council [CAA Council]" (Hearn, 2006 p. 7). The FAR and all revisions are available on the Internet at https://www.acquisition.gov/?q=browsefar.

The FAR is the primary regulation that controls the Federal Acquisition System. It applies to all federal agencies executing acquisitions made with "appropriated funds for all supplies and services, which include research and development; and construction, alteration, repair and maintenance of real property" (Hearn, 2006, p. 7). The FAR is comprised of two chapters: Chapter I covers FASR Part 1 through Part 51, and Chapter II covers FAR Part 52 and Part 53. For the purposes of this literature review, we will focus

on FAR Part 1 and FAR Part 7 as these two parts of the FAR relate to our research. FAR Part 1 addresses the purpose, authority and guiding principles of the Federal Acquisition System. FAR Part 7 addresses Acquisition Planning, which is key to contract award and the successful performance of a program.

The purpose and authority of the FAR can be found in FAR Subpart 1.101. FAR Subpart 1.102 discusses the Guiding Principles for the Federal Acquisition System:

- The vision for the Federal Acquisition System is to deliver on a timely basis the best value product or service to the customer, while maintaining the public's trust and fulfilling public policy objectives. Participants in the acquisition process should work together as a team and should be empowered to make decisions within their area of responsibility.

- The Federal Acquisition System will:

(1) Satisfy the customer in terms of cost, quality, and timeliness of the delivered product or service by, for example:

(2) Maximizing the use of commercial products and services,

(3) Using contractors who have a track record of successful past performance or who demonstrate a current superior ability to perform; and

(4) Promoting competition,

(5) Minimizing administrative operating costs,

(6) Conducting business with integrity, fairness, and openness, and

(7) Fulfilling public policy objectives.

- The Acquisition Team consists of all participants in Government acquisition including not only representatives of the technical, supply, and procurement communities but also the customers they serve, and the contractors who provide the products and services.

- The role of each member of the Acquisition Team is to exercise personal initiative and sound business judgment in providing the best-value product or service to meet the customer's needs. In exercising initiative, Government members of the Acquisition Team may assume if a specific strategy, practice, policy or procedure is in the best interests of the Government and is not addressed in the FAR, nor prohibited by law (statute or case law), Executive order or other regulation, that the strategy,

practice, policy or procedure is a permissible exercise of authority. (Federal Acquisition Regulation, 2015, Subpart 1.102)

The guiding principles or standards of the FAR, customer satisfaction, minimizing operating cost, "maintaining the public trust, and fulfilling public policy objectives" (Engelbeck, 2002, p. 16), provide the criteria for which the acquisition team can measure how well they perform and can gauge how successful they are at meeting the vision for the Federal Acquisition System. These standards, shown in Figure 2, provide a framework for the acquisition team to leverage during the decision-making process.

Figure 2.   Standards of Performance for the Acquisition System
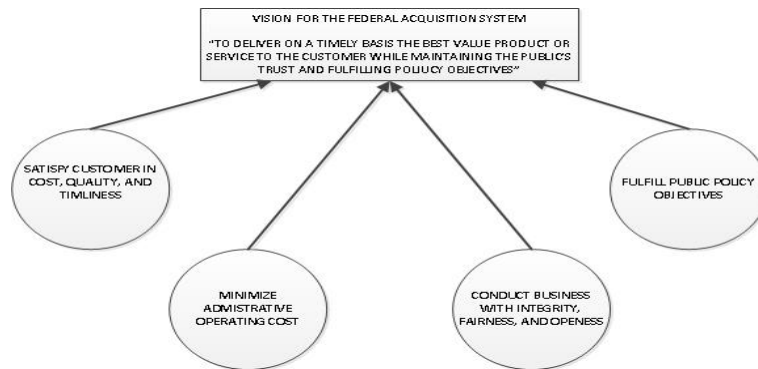
From Engelbeck, R. M. (2002). *Acquisition management.* Vienna, VA: Management Concepts.

From the standpoint of this analysis, the first standard, customer satisfaction, is most relevant and it implies that "the product is more important than the process" (Engelbeck, 2002, p. 17). It is mandatory to follow the seven elements, depicted in Figure 3, of this standard to ensure success.

Figure 3.   Key Elements of Customer Satisfaction
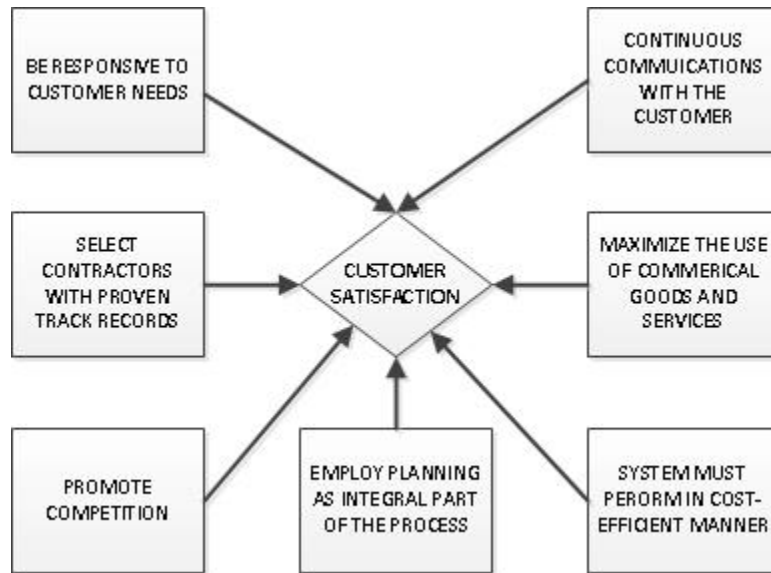
From Engelbeck, R. M. (2002). *Acquisition management.* Vienna, VA: Management
Concepts.

(1)   The ultimate user's needs are paramount;

(2)   Continuous communication is key to define and refine performance
characteristics of the product or service sought;

(3)   Consideration of a potential offeror's ability to provide the product or
service sought;

(4)   Identification of sources within industry that have the potential to provide
the designated products or service;

(5)   Promotion of effective competition;

(6)   Propensity to deliver to a high-quality product when and where it is
needed at a cost effective price; and

(7)   Leverage advanced planning as part of the overall process while ensuring
the objective capability remains flexible (Engelbeck, 2002, pp. 17–18).

All members of the acquisition process are responsible for making decisions that
will ensure the delivery of "the best value product or service to the customer" (Federal
Acquisition Regulation, Part 1, Subpart 1.102).

FAR Part 1 establishes the general policy and information regarding the Federal Acquisition Regulations; FAR Part 7 addresses Acquisition Planning. Specifically, FAR Part 7.1 discusses "the policies and procedures for developing acquisition plans, determining whether to use commercial or Government resources for the acquisition of supplies and services" (Hearn, 2006, p. 27), deciding if it is cost effective to lease or invest in the purchase of equipment, and determining functions that are inherently governmental. Acquisition planning uses the coordination of the integrated acquisition team's efforts in determining procurement needs. It identifies the technical, business, and management considerations that will influence the team's decision-making process when developing the Acquisition Plan.

General procedures of FAR Part 7 are found in Sub-Part 7.104, which states that acquisition planning will be initiated upon the identification of a need and should be conducted in advance of the fiscal year (FY) that the capability or service is required (Federal Acquisition Regulation, 2015, Subpart 7.104). This lead time in the acquisition process is necessary to ensure that administrative requirements are satisfied and actual production of the item or service needed is completed and placed in the hands of the customer or end users within the time specified.

Acquisition planning demands a dedicated teaming effort and requires all team members to coordinate and integrate their skill sets to ensure the development of a complete and comprehensive Acquisition Plan.

B.   DEFENSE FEDERAL ACQUISITION REGULATION SUPPLEMENT

The Defense Federal Acquisition Regulation Supplement (DFARS) is a supplement to the FAR and it facilitates the implementation of the FAR in Department of Defense (DOD) organizations.

> DOD implementation and supplementation of the FAR is issued in the DFARS under authorization and subject to the authority, direction, and control of the Secretary of Defense. The DFARS contains:
>
> - Requirements of law;
>
> - DOD-wide policies;

- Delegations of FAR authorities;

- Deviations from FAR requirements; and

- Policies/procedures that have a significant effect beyond the internal operating procedures of DOD or a significant cost or administrative impact on contractors or offerors. (Defense Federal Acquisition Regulation Supplement (DFARS), 2015, § 201.301)

The DFARS follows the same format as the FAR and is different only in the numbering schema. For instance, DFARS Part 207 Acquisition Planning addresses FAR Part 7 Acquisition Planning. The DFARS does not supersede or replace the FAR; it augments the FAR and further prescribes policy to enable the Federal Acquisition Regulations within the DOD. By law, the DFARS cannot negate any of the policies and directives set forth in the FAR.

C.   DEPARTMENT OF DEFENSE (DOD) 5000 SERIES

The DOD 5000 Series documents are a collection of Directives, Instructions, and Memoranda that collectively build a framework that governs the operation of the Defense Acquisition System. The original 5000 Series documents were penned in the early 1970s during the first Nixon administration. The catalyst for creating this framework goes back to the late 1960s, when public and congressional disenchantment with the waning war in Vietnam along with the rising cost of weapon systems' acquisitions led to attempts by Congress to reduce defense spending (Ferrara, 1996, p. 110). Then Secretary of Defense, Melvin Laird, and his Deputy, David Packard, decided that a formal acquisition framework was the best approach for managing defense acquisition in the new fiscally constrained environment. The Defense Systems Acquisition Review Council (DSARC) was formed in May 1969 by then Deputy Secretary of Defense David Packard to advise the Secretary of Defense on major weapon systems acquisitions (Packard, 1969, p. 3). Packard issued a second memorandum on defense acquisition in May 1970 that, "articulated many of the broad themes that would later become the foundation for the first DOD 5000 Series" (Ferrara, 1996, p. 111); these themes included, "decentralized execution, streamlined management structures, and use of appropriate contract mechanisms" (Ferrara, 1996, p. 111). According to Packard, "the primary objective of

DOD oversight is to enable the Services to improve the management of their programs"
(Packard, 1970, p. 1). The first formally issued DOD 5000 Series was in July of 1971,
and the "Mode of Operation" outlined in this austere seven-page document is this:

> Successful development, production, and deployment of major defense
> systems are primarily dependent upon competent people, rational
> priorities, and clearly defined responsibilities. Responsibility and authority
> for the acquisition of major defense systems shall be decentralized to the
> maximum practicable extent consistent with the urgency and importance
> of each program. The development and production of a major defense
> system shall be managed by a single individual (program manager) who
> shall have a charter which provides sufficient authority to accomplish
> recognized program objectives. Layers of authority between the program
> manager and his Component Head shall be minimum… [The] assignment
> and tenure of program managers shall be a matter of concern to DOD
> Component Heads and shall reflect career incentives designed to attract,
> retain, and reward competent personnel. (Department of Defense, 1971, p.
> 1)

While the DOD 5000 Series has undergone 16 rewrite (Table 1) since the original
document and ballooned at times to 900 pages in length, including references, many of
the modifications reflect an attempt to realize principals and themes that can be traced
back to the original document and vision. Since this research analyzes the contracting
function, it is important to highlight two relevant program considerations outlined in the
first issuance of the 5000 Series. First, consideration (7) "contract type shall be consistent
with all program characteristics, including risk" (Ferrara, 1996, p. 112), and the second
consideration is (8) "source selection decisions shall take into account the contractor's
capability to develop a necessary defense system on a timely and cost-effective basis"
(Ferrara, 1996, p. 112). The fact that two out of nine considerations address contracting
issues speaks volumes to understanding the importance of this critical piece even during
the early days of managing defense acquisition.

Table 1.   Number of DOD 5000 Issuances per Administration

Administration	No. of Issuances
Nixon	1 (1971)
Ford	2 (1975,77)
Carter	1 (1980)
Reagan	4 (1982,85,86,87)
Bush (41)	1 (1991)
Clinton	2 (1996,2000)
Bush (43)	3 (2002,03,08)
Obama	2 (2013 Interim, 15)

After Ferrara, J. (1996). DOD's 5000 documents: Evolution and change in defense acquisition policy. *Acquisition Review Quarterly, 3*(2), 109–130. Retrieved from http://www.dtic.mil/cgi-bin/GetTRDoc?Location=U2&doc=GetTRDoc.pdf&AD=ADA317765

As of the writing of this paper, the current release of the directive portion of the series, DODD 5000.01, was on May 12, 2003, and it was certified current as of November 20, 2007. While this document is only 10 pages, it contains the core policy for governing the DAS. The fact that the directive document has withstood 12 years, two administrations, and three rewrites of the corresponding instructional document speaks volumes to the fact that the principals and themes contained within the directive are still relevant. There is, however, as evidenced by the three corresponding rewrites, agreement that we are not achieving the policies set forth by the directive, and there is more work to be done to achieve them.

The current DODD 5000.01 Section 2.2 states that this policy is applicable to "all acquisition programs" (Department of Defense, 2003, p. 1). In an effort to better understand the regulatory framework that PMs and KOs are required to operate within, this paper will outline the relevant sections of the 5000 Series with respect to contracting and collaboration. The directive establishes policy for several items, four of which—collaboration, competition, cost sharing, and performance-based acquisition—will be investigated further.

First, collaboration (a portion of this research's title) is mandated by DOD policy for all acquisitions:

The DOD acquisition, capability needs, and financial communities, and operational users shall maintain continuous and effective communications with each other by using Integrated Product Teams (IPTs). Teaming among warfighters, users, developers, acquirers, technologists, testers, budgeters, and sustainers shall begin during capability needs definition. MDAs [milestone decision authority] and PMs are responsible for making decisions and leading execution of their programs, and are accountable for results. (Department of Defense, 2003, p. 5)

As stated in the policy excerpt, "continuous and effective" communications are not only expected but also mandated in this directive between all parties to include the PM and KO functions. Further reading reveals that this communication shall be enabled by using IPTs, and this process will begin during the capability needs' phase of the acquisition. The question of whether or not this mandated communication is occurring and, if so, its level of effectiveness, will be further investigated in Chapters III and IV.

Second, competition is required in accordance with the current statutory requirements addressing the issue. The policy states that:

Competition shall provide major incentives to industry and Government organizations to innovate, reduce cost, and increase quality. All of the DOD Components shall acquire systems, subsystems, equipment, supplies, and services in accordance with the statutory requirements for competition. Acquisition managers shall take all necessary actions to promote a competitive environment, including the consideration of alternative systems to meet stated mission needs; structuring Science and Technology (S&T) investments and acquisition strategies to ensure the availability of competitive suppliers throughout a program's life, and for future programs; ensuring that prime contractors foster effective competition for major and critical products and technologies; and ensuring that qualified international sources are permitted to compete. If competition is not available, PMs shall consider alternatives that will yield the benefits of competition. (Department of Defense, 2003, p. 5)

It is clear from the policy that competition is a cornerstone of establishing value for the DOD. For multiple reasons including cost, innovation, and quality, it is imperative that competition is leveraged whenever and wherever possible. This piece is key in establishing the acquisition and business strategies, which are discussed later in this chapter.

Third, cost sharing is an important part of the 5000 Series that requires a sharing of cost risk between the contractor and government. The policy states that:

> The PM shall structure the acquisition in a way that neither imposes undue risk on contractors, nor requires unusual contractor investment. Contractors shall not be encouraged nor required to invest their profit dollars or independent research and development funds to subsidize defense research and development contracts, except in unusual situations where there is a reasonable expectation of a potential commercial application. Contractors are entitled to earn reasonable rewards on DOD contracts, including competitively awarded contracts. (Department of Defense, 2003, p. 6)

This policy is important to ensure that contractors do not take undue risk while at the same time to protect the government by ensuring that, by lack of prohibition, the contractor can be burdened with some normal level of investment and risk responsibility commensurate with the contract being awarded. This policy is important to consider when looking at how the PM and KO will communicate and develop an acquisition strategy to meet these policies while simultaneously getting the procurement accomplished.

Finally, performance-based acquisition is a policy portion of the directive stating that requirements must be performance-based leading to maximizing competition and flexibility. The directive states:

> To maximize competition, innovation, and interoperability, and to enable greater flexibility in capitalizing on commercial technologies to reduce costs, acquisition managers shall consider and use performance-based strategies for acquiring and sustaining products and services whenever feasible. …When using performance-based strategies, contract requirements shall be stated in performance terms, limiting the use of military specifications and standards to Government-unique requirements only. Acquisition managers shall base configuration management decisions on factors that best support implementing performance-based strategies throughout the product life cycle. (Department of Defense, 2003, p. 7)

Requiring performance-based acquisition makes early collaboration even more critical. Capturing needs during requirements definition expressed in terms of capabilities is mandatory. The collective efforts of the PM and KO teams here are invaluable in

determining a set of performance characteristics that are not only representative of the capability being sought, but are also procurable in a contract, meaning that the performance specifications are testable and verifiable.

The corresponding instructional or implementation document within the 5000 Series is the DODI 5000.02. As of the writing of this document, the current version dates from January 7, 2015. The following is an overview of how the previously reviewed contracting-related policies are outlined within the instruction.

Per the previously reviewed policies, the contracting team will be in collaboration with the program management team starting with capability needs' definition. This early collaboration, facilitated by using IPT, is invaluable during source selection by ensuring that all requirements are clearly defined, procurable, and are performance-based, ensuring maximum competition and flexibility. From this early collaboration, the first product to be developed will be the acquisition strategy. The acquisition strategy will outline the "plan for program execution across the entire program life cycle" (Department of Defense, 2015, p. 75). It is an all-inclusive, living document that will cover items such as acquisition approach, assumptions, business environment, risk, contracts, incentives, and much more. Two of the key portions of the document with respect to contracting involvement are the contract type determination and the termination liability estimate. First, the contract type must be consistent with the program's current level of risk, and the selection of fixed or cost type must be justified. As part of the overall acquisition strategy, the MDA will approve the selection and justification. Second, the termination liability estimate is required to be included in the acquisition strategy for MDAPs where the potential liability termination could be reasonably expected to exceed $100 million. This highlights the need to balance effectively the selection of contract type such that government liability is limited, contractor is not burdened unduly by risk or investment, and competition is utilized to the maximum extent practicable. As part of the acquisition strategy, the contracting and program management teams will draft a business strategy which will specifically address the rationale for the contracting approach that is outlined in the acquisition strategy. The business strategy will address how competition is enabled and maintained and how incentives will be used to meet program goals.

Throughout the acquisition cycle several key contracting or contracting-involved events occur prior to and after every milestone. First is the creation or update, depending on the milestone, of the acquisition strategy that includes the business plan. Second is the development of the source selection plan for the upcoming issuance of contracts just after the impending milestone. Third is the draft and the final RFP for the contracts desired in the next phase. After the MDA approves entrance to the next phase, the source selection is completed and contracts issued. This process starts again for the next milestone and contracts for the following phase of the program. For these reasons, it is critical to have ongoing and meaningful communications between the PM and KO.

D.   DEFENSE ACQUISITION GUIDEBOOK

By design, The Defense Acquisition Guidebook (DAG) provides guidance and best practices to the acquisition community, and it is based on the Department of Defense directive (DODD) 5000.01, *The Defense Acquisition System*, and Department of Defense instruction (DODI) 5000.02, *Operation of the Acquisition Management System*. The version evaluated here does not yet reflect the changes in the DODI 5000.02 (Defense Acquisition University, 2012, Forward). The DAG is an online resource accessible through the Defense Acquisition University (DAU) website. To highlight the importance of communication and collaboration between the PM and KO, the focus is on those best practices as specified in the DAG.

DAG Chapter 2 discusses the development of an acquisition strategy stating that, "A program's strategy should be developed organically by the Program Management Office in collaboration with related communities and stakeholders" (Defense Acquisition University, 2012, sect 2.0.1). The development of the Technology Development Strategy (TDS) embodies the importance of this statement, and TDS precedes the acquisition strategy (AS) and the release of an RFP. The TDS and AS include the Business Strategy, the Contracting Strategy, and Incentives for the proposed program—all of which would benefit from discussion with a KO since this forms the basis of solicitation to which contractors will reply with their proposals.

Addressed in DAG Chapter 14 is the acquisition of services. It gives great emphasis on the importance of establishing the acquisition team early on in the process. "Getting your acquisition team organized and focused early in the process is a fundamental key to successfully achieving the mission results your customers require" (Defense Acquisition University, 2012, sect 14.1, para 2).

In the framework for the Service Acquisition Process (Figure 4), the DAG addresses the Planning, Development, and Execution Phases of the program. Figure 4 lists the recommended team members as well as the process. It is important that the team collaboration starts very early in the process where the RFP and contract award do not happen until steps 4–6. This indicates that a lot of work and preparation happens up front, and it should include coordination and communication with the team, including the contracting representatives.

Figure 4.   Framework for the Service Acquisition Process
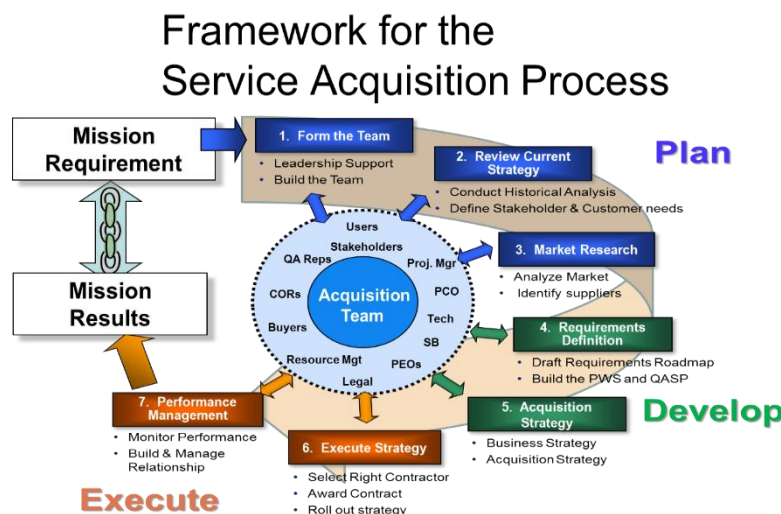
From Defense Acquisition University. (2012). *Defense acquisition guidebook*. Ft. Belvoir, VA: Author. Retrieved from https://dag.dau.mil/Pages/Default.aspx

E.   PERFORMANCE OF THE DEFENSE ACQUISITION SYSTEM

Our research questions revolve around communication between the KO and PM early in the contracting process as well as how the current laws, statutes, and regulations

impact the ability to create contracts which contain well-defined and measurable requirements; they also revolve around the type of contract used. The acquisition process is under continuous examination that leads to evolving direction on how to execute contracts. Better Buying Power (BBP) is leading many of those changes, and it is worth further examination here.

As part of an ongoing effort to understand the current state of the Defense Acquisition System, the Under Secretary of Defense, Acquisition, Technology, and Logistics USD(AT&L) commissioned an annual study and resulting report. These reports provide a better understanding of the working acquisition process. "Working acquisition process" means the reality of how the acquisition workforce functions throughout the year, the real challenges, and the hurdles imposed by the statutes and laws governing the acquisition process. The 2013 report focused on the effects of the statutes and laws, while this year the focus is on incentives used in contract type and the major drivers in schedule, cost, and technical performance (OUSD[AT&L], 2014, p. iii).

From the following comment by Mr. Frank Kendall, Under Secretary of Defense for Acquisition, Technology and Logistics, it is evident that there is a need for the flexibility to tailor individual acquisition programs to the specific circumstances:

> These findings do not, however, dictate "one size fits all" policies. Defense acquisition is complicated and varying. There are no simple "schoolhouse" solutions that should be mandated absent the particulars of each acquisition in question. These findings do, however, inform our individual program decisions and provide fresh insights into what generally works in what circumstances and why. This is critical to improving our performance: We must empower, encourage, and train our workforce to think—not dictate a cookbook that workforce members blindly follow. (OUSD[AT&L]), 2014, p. iv)

F.   BETTER BUYING POWER

Achieving Dominant Capabilities through Technical Excellence and Innovation

Launched in 2010, Better Buying Power (BBP) is a continuous and evolving effort. The end result is the ability to deliver quality products to the defense workforce and military, starting with quality planning and execution of the program. BBP identifies

initiatives intended to enhance the acquisition community and increase the success of government programs. It is relevant to this research in that it is the most recent effort to address the complexity of the acquisition process and some of the identified shortcomings within the community. There are, however, no specific actions that create an environment where the communication and collaboration between the PM and KO would be encouraged. BBP 3.0, released April 2015, is focused on providing technically superior items, dominant capabilities, and quality products to the warfighters while controlling excessive costs and schedules (OUSD[AT&L], 2015, pp. 1–33). Achievement of these objectives is possible through the development of new and adding to existing Defense Acquisition University (DAU) training, as well as the review and issuance of guidance to services and agencies that address best practices, communication, and collaboration.

The hypothesis for our thesis is that increased communication early in the acquisition program between the KO and PM will lead to projects that are more successful. In evaluating BBP 3.0, it is clear that adhering to requirements, using correct contract types, increasing communication, and building partnerships among acquisition communities are important.

G.   PERFORMANCE ASSESSMENTS AND ROOT CAUSE ANALYSIS

The Office of Performance Assessments and Root Cause Analysis (PARCA) is a Directorate of the Office of the Assistant Secretary of Defense for Acquisition. PARCA "is the central office for major defense authorization performance assessment, root cause analysis, and earned value management within the Department of Defense" ("About PARCA," n.d., About section). The PARCA office "was established by section 103 of the Weapons System Acquisition Reform Act [WSARA] of 2009" ("About PARCA," n.d., About section). The director of the Office of PARCA is responsible for submitting an annual report (no later than March 1) to Congress outlining findings of performance assessments and root cause analyses conducted during the prior year ("About PARCA," n.d., About section, Initiatives para.). WSARA Section 103 (c) and (d) outline the evaluation and assessment criteria for conducting performance assessments and root cause analyses:

PERFORMANCE ASSESSMENTS: For purposes of this section, a performance assessment with respect to a major defense acquisition program is an evaluation of the following:

The cost, schedule, and performance of the program, relative to current metrics, including performance requirements and baseline descriptions;

The extent to which the level of program cost, schedule, and performance predicted relative to such metrics is likely to result in the timely delivery of a level of capability to the warfighter that is consistent with the level of resources to be expended and provides superior value to alternative approaches that may be available to meet the same military requirement;

ROOT CAUSE ANALYSES: For purposes of this section and section 2433a of title 10, United States Code (as so added), a root cause analysis with respect to a major defense acquisition program is an assessment of the underlying cause or causes of shortcomings in cost, schedule, or performance of the program, including the role, if any, of:

- Unrealistic performance expectations;

- Unrealistic baseline estimates for cost or schedule;

- Immature technologies or excessive manufacturing or integration risk;

- Unanticipated design, engineering, manufacturing, or technology integration issues arising during program performance;

- Changes in procurement quantities;

- Inadequate program funding or funding instability;

- Poor performance by government or contractor personnel responsible for program Management; or

- Any other matters. (Weapon Systems Acquisition Reform Act, 2009, p. 14)

In Chapter IV, we examine various reports developed by PARCA that resulted from the office conducting root cause analyses of contract cost growth associated with enterprise resource planning (ERP) systems, program acquisition unit cost increases of the Global Hawk program, and the root cause of the Nunn-McCurdy breach experienced by the Joint Tactical Radio System in 2011. We use the data gathered from these reports to assist in developing our findings and results for this research.

H.   SUMMARY

The focus of this literature review is on those aspects of existing regulations and processes that are designed to ensure successful execution of an acquisition with regards to encouraging and enabling the PMs' and KOs' communication and collaboration early in the acquisition life cycle. In this chapter, we reviewed the regulatory directives that guide how the Army Acquisition process operates, as well as written reports and assessments to address the hardships and failures of that process. We also analyzed reports that underscore the importance of PM and KO communication and collaboration early in the program's life cycle to ensure accurate and well-defined requirements are in the contract and to ensure the use of the correct contract type. In Chapter III, we describe the methods and models leveraged to conduct analysis of the data gathered for this research.

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III. DATA ANALYSIS FRAMEWORK

This chapter describes the framework and models used for the data analysis presented in Chapter IV. The boundary conditions and thought processes that played a role in shaping the course of this research is also examined.

We selected mixed methods research as the best fit for the type of analysis that is required to support the thesis of this paper adequately. By utilizing both quantitative and qualitative data sources, a clearer picture emerged with regard to the phenomenon of why poor program and contract performance exists and how early and consistent communication between the PM and KO impacts that performance. For the purposes of examining the current and past performance of the Defense Acquisition System, we determined that quantitative data provided the most useful insight into the current state of the process with respect to cost, schedule, and performance. It was also determined that although quantitative data would be good for evaluating the current performance of the Defense Acquisition System, that alone would not provide the requisite data required to conduct an analysis that would result in findings that we could report with confidence. For this type of analysis, and to examine the way the Defense Acquisition System works from the perspective of those who operate within it, a qualitative data set was required. The mixed methods approach used in this paper fuses statistical performance data with interview data from professionals in the field of defense acquisition. To demonstrate the problem, the statistical data used in support of this paper were incorporated. In order to academically propose a contributing factor, root cause, or possible solution, the supporting evidence proving the existence of a problem or defect must first be present. The qualitative interview data along with reduction and analysis provided the bulk of this research.

The research for this paper conforms to all Naval Postgraduate School guidelines regarding the conduct of Human Subjects Research. After the decision was made to conduct interviews as a means for gathering the qualitative data needed for analysis, interview questions were formulated using an analysis matrix to cross-walk the research questions and analysis required to formulate the actual questions. These questions along

with the formal research protocol for this project were submitted to the NPS Institutional Review Board for ruling. The finding by the current IRB chair was that this research, "did not involve collecting information about a living individual" (C. Lai [Human Research Protection Program Administrator], personal communication, February 25, 2015). This is because the interview questions were specifically designed to capture factual experiences about the professional careers of the interviewees and were not focused on opinion or conjecture.

The research methodology used to capture the qualitative data for this analysis falls within the realm of phenomenological research. The primary goal of this type of research is to capture a "lived experience" (Ballad & Bawalan, 2012, p. 2) of a particular phenomenon. The phenomenon in this particular instance is that of the Defense Acquisition System and the interaction of the PM and KO throughout the acquisition life cycle. The objective in using this research methodology is to capture what is actually happening in the PM shops currently and to see how well that is working for those who are tasked with procuring the products and services that support our nation's military. Through the eyes of the interviewees, we gained a unique inside-out perspective, providing highly useful research data. The most suited tool for analyzing our data sets obtained through this research method was interpretive analysis.

The interpretive analysis method is a process by which the transcripts from the interviews are reduced and refined to data points that support the findings (Chapter IV). According to a 2010 presentation by C. Ballad and R. Bawalan, this process includes four sequential steps used to reduce the raw interview transcripts into a structured set of "emerging themes" (Ballad & Bawalan, 2012, p. 12); for the purposes of this research, we call these common themes. Also according to Ballad and Bawalan, these common themes need support from illustrative data extracted from raw interviews. The first step in our process was an initial review of the transcript data and the taking of notes. The second step involved reviewing the transcripts with notes to develop "common threads." Common threads are concise phrases that contain enough particularity to remain grounded and enough abstractions to offer conceptual understanding. In the third step, we examined the threads and grouped them together by similarities and began the

identification of a structure helpful in highlighting converging ideas. The last step was to create a structure showing major and minor themes supported by illustrative data extracts (Ballad & Bawalan, 2012, p. 8).

The primary objective of this paper, as the title states, is to determine to what degree early and continuous communication between the PM and KO impact the success of the Defense Acquisition System. To address this question effectively, we developed secondary research questions to support our primary analysis. The first question is: What is the current success/failure rate of Army acquisitions and why? This is important to lay the foundation that for later use to measure against when determining the impacts of PM/KO collaboration. The second question is: What are the issues with RFPs/contracts that are significantly affecting program performance? This question is important when looking at the root cause of problems and failures. The third question is: Does current acquisition policy, law, and regulation impact the success/failure rates of contract execution? This data set is important to the analysis in that it helps to understand the framework within which these two functional areas operate to aid in identifying the current state of DOD acquisitions.

From the preceding research questions, we used an analysis matrix method to determine the necessary data required to adequately answer the questions. We extracted quantitative data from several public sources including the USD(AT&L) annual report on the performance of the Defense Acquisition System and the OSD office of Performance Assessments and Root Cause Analysis. This statistical data was used to show the current status and trends of the performance of the DAS. Qualitative data was extracted from interview transcripts generated from the interview questions (see Appendix).

A. COMMUNICATION PROCESS AND TEAMS

The essence of government programs revolves around teams, such as the integrated acquisition team. Our primary research question is analyzing that relationship between the PM and KO and how communication affects the successfulness of contracting and ultimately of the program. The verbal and written communication forms are what most people think of when talking about communicating. There are, however,

other variables that influence how effective that communication is. First, we examine the basics of communication, then discuss variables that affect the degree of success, and, finally, we look at effective team building.

At its very foundation, communication is the process of sharing information that involves one person generating a message to another person or to a group of people with the intent of everyone having a common understanding of the message. Johnson asserts in his Handbook of Interpersonal Communication that "to be complete, the process must have the following three basic elements" (Johnson, Handbook of Interpersonal Communication, *Organization Studies* 24 (2003) as cited in Certo, & Certo, 2006, p. 330): source/encoder, signal, and decoder/destination.

The source/encoder is the person originating the information prior to sharing. Encoding the information puts it into an easily understandable format so that the person receiving the information readily understands. Examples of encoding include email, information papers, and graphical presentations such as PowerPoint slides for meetings.

The signal is the process by which the encoded information transmits to the receiver. The signal could be verbal or in writing.

The decoder/destination is the person or persons receiving the information transmitted by the source. The message is decoded, or the person or persons who receive it interpret its meaning.

To increase the likelihood that communication is successful, the experience of the sender (encoder) and the receiver (decoder) should be at a similar level. If the sender and receiver have overlapping experience as illustrated in Figure 5, the probability is high that the communication process will be successful.

Figure 5.   Overlapping Field of Experience Communication Model
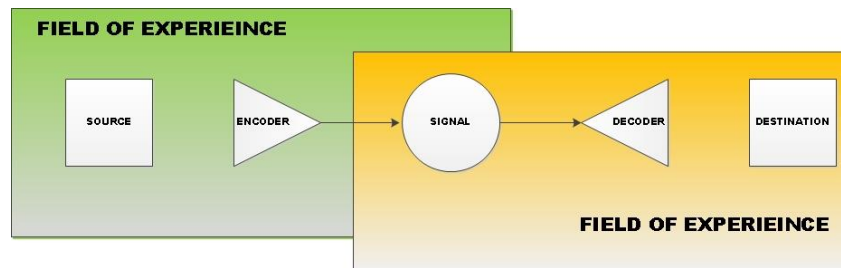
From Certo, S. C., & Certo S. T. (2006). *Modern management*. Upper Saddle River, NJ: Prentice Hall.

From the standpoint of contracting officer and program manager Communication, their field of experience should be overlapping to ensure success throughout the Acquisition process. Without overlapping fields of experience, the chances of successful communications diminish where the meaning of the information the sender intends to share with the receiver is lost during the decoding process.

Alex Pentland reported in an article titled, *The New Science of Building Great Teams*, published in the Harvard Business Review (2012, pp. 2 - 3), that MIT conducted several studies of team dynamics to determine the "it factor" that made teams exceptionally effective. They were able to gather quantitative data by using "electronic badges that collected data on their individual [participants] communication behavior - tone of voice, body language, whom they talked to and how much" (Pentland, 2012, p. 3). What they found was that the key to high performance is linked to communication (Pentland, 2012, p. 15). This data is important to our study because it shows empirical evidence in a quantifiable way that supports how crucial communication is to successful team dynamics. Additionally, the data illustrates how communication takes place at many different levels—not just in the written or verbal message itself.

B.   THREE INTEGRATIVE PILLARS OF SUCCESS (TIPS)

Complementing the communications process is the Three Integrative Pillars of Success (TIPS). Developed in 2010, by E. Cory Yoder as an assessment and management tool for planning and executing contingency contracting operations, TIPS was first published in *Phase Zero Operations for Integrative Planning* (Yoder, 2010) and again in

PZCO-Phase Zero Contracting Operations (Yoder, 2012). Originally, the three integrative pillars included personnel, platforms, and protocols. Updates to the model in 2013 added authorization and appropriation to the foundation of the three pillars. The premise of this addition was that without congressional authorizations and the resultant appropriations, contracting actions could not be executed. For this paper's analysis, we only focus on the three pillars. Used with the Communications Process model, Interview Data Extrapolation model, interpretive phenomenological analysis (IPA) method, and Common Theme Analysis, TIPS rounds-out our Data Analysis Framework that we use in conducting the data analysis presented in Chapter IV.

We show that the Three Integrative Pillars of Success as shown in Figure 6 is considered to be at the center of successful communications between the program manager and contracting officer to ensure a robust and collaborative environment within the Integrated Acquisition Team tasked with translating requirements into effective contracts.

Figure 6.   TIPS Model
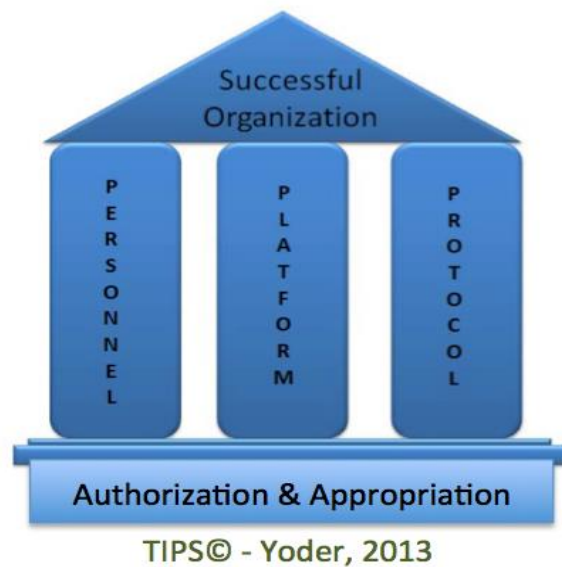
From Yoder, E. C. (2010). Phase zero operations for contingency and expeditionary contracting—Keys to fully integrating contracting into operational planning and execution   (Report   No.   NPS-CM-10-160).   Retrieved   from
http://www.acquisitionresearch.net/files/FY2010/NPS-CM-10-160.pdf

1. Personnel

The first pillar of the Three Integrative Pillars of Success is "personnel." "This pillar is the critical link amongst personnel, rank, position, credential, and capability" (E. C. Yoder, personal communication, July 22, 2015). The Communication Protocol for the Integrated Acquisition Team model (Figure 7) requires the right mix of team members and skill sets, program management, contracting, engineering, functional expertise, and user involvement to ensure successful communications within the team.

Figure 7.   Communications Protocol for the Integrated Acquisition Team
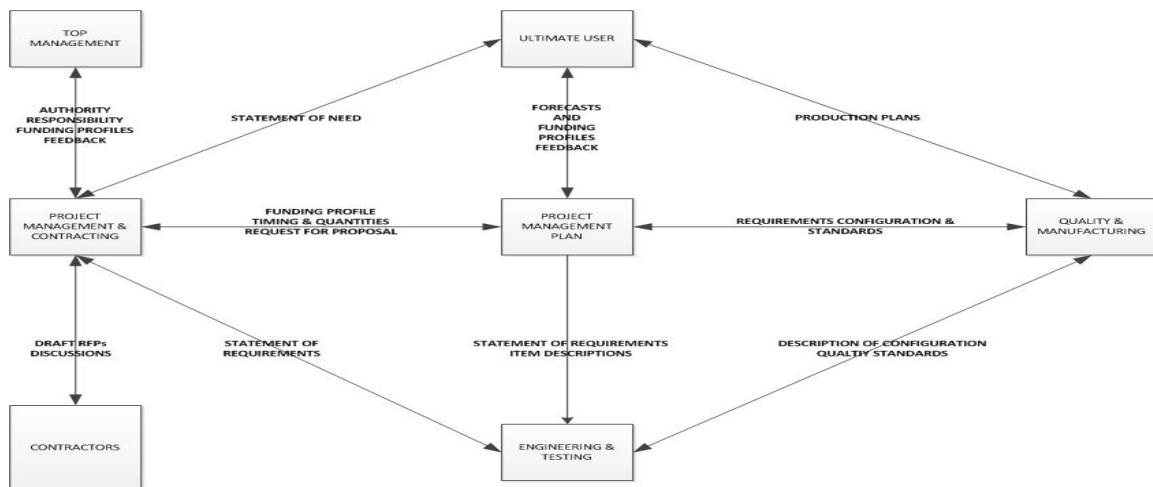
From Engelbeck, R. M. (2002). *Acquisition management.* Vienna, VA: Management.

Open lines of communication ensure a complete understanding of user requirements necessary to develop a request for proposal (RFP) that will result in a legal and binding contract between the Army and the service provider. As discussed in Chapter I, the objective of an Integrated Acquisition Team is to "reach agreement on the strategy and plan by identifying and resolving issues early, understanding the issues and the rationale for the approach, and finally, documenting a quality deliverable(s) that is acceptable to all organizational levels the first time" (COL H. Culclasure, personal communication, April 16, 2015). The personnel pillar of TIPS enables the team to realize this objective.

2.   Platforms

The second pillar of the Three Integrative Pillars of Success is "platforms" which consists of the "hardware and tangible software systems that provide for analysis, decision-making, production, management, and communication" (E.C. Yoder, personal communication, July 22, 2015). The Army relies on two automated systems used to support contracting writing: the Procurement Defense Desktop (PD^2) and the Standard Procurement System (SPS); both PD^2 and SPS support the Department of Defense paperless acquisition initiative. Providing visibility of procurement data to Congress is the Federal Procurement Data System – next generation (FPDS-NG). The intent of FPDS-NG is to measure and provide an assessment of federal procurements for contracts over $3K; FPDS-NG reports on the dollars spent to meet the goals of the Small Business Administration, and documents full and open competition procedures used in the acquisition process. Although platforms are necessary for the total success of TIPS for the purposes of this research, platforms is of lesser significance.

3.   Protocols

The third pillar of TIPS is "protocols." Protocols includes the rules, decision-making framework, policies, and business models necessary to achieve the desired outcome (E. C. Yoder, personal communication, July 22, 2015), and describes what should be done and how to influence an outcome. As discussed in Chapter II, the FAR, DFARS, DOD 5000 Series, and DAG are part of the protocols' pillar. The protocols' pillar has an influence on Integrated Acquisition Teams and can strongly relate to the personnel pillar. The Overlapping Field of Experience Communication Model (identified in Figure 5) and the Communications Protocol for the Integrated Acquisition Team model (identified in Figure 7) both lend themselves to the protocols' pillar of the TIPS model.

As part of our data analysis framework, the Three Integrative Pillars of Success is considered to be at the center of successful communications between the program manager and contracting officer to ensure a robust and collaborative environment within the Integrated Acquisition Team tasked with translating requirements into effective contracts.

C.   INTERVIEW DATA EXTRAPOLATION

As part of the data gathering process, we conducted interviews with Department of the Army Civilians and Soldiers who are members of the Army Acquisition Corps, working in Program Management and Contract Management career fields. The methodology we followed for examining interview responses can be defined as Data extrapolation. To support this methodology, we used Microsoft Excel to capture the responses of each interview question, and we conducted analysis using a simple pivot table. We categorized responses based on criteria specific to the question being asked and scored based on an individual's response. Responses were counted and their frequency distribution displayed as either a bar chart or a pie chart, which are provided in the Interview Analysis section of Chapter IV. As an example, the graphs in Figures 8 and 9 depict responses to interview question number 3 where we asked: *Where has communication, or lack thereof, between the PM and KO been a contributing factor to the failure of an Army Acquisition (Failure being an APB Breach, cost overrun, schedule slip)? Please provide specific examples.*

Figure 8.   Bar Chart of Responses to Interview Question 3
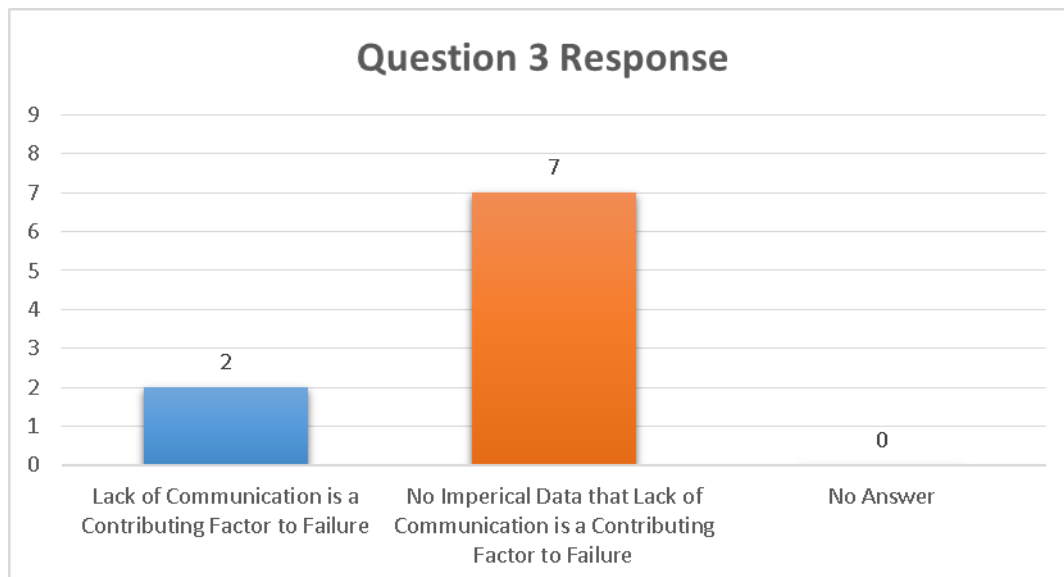
Figure 9.   Pie Chart of Responses to Interview Question 3
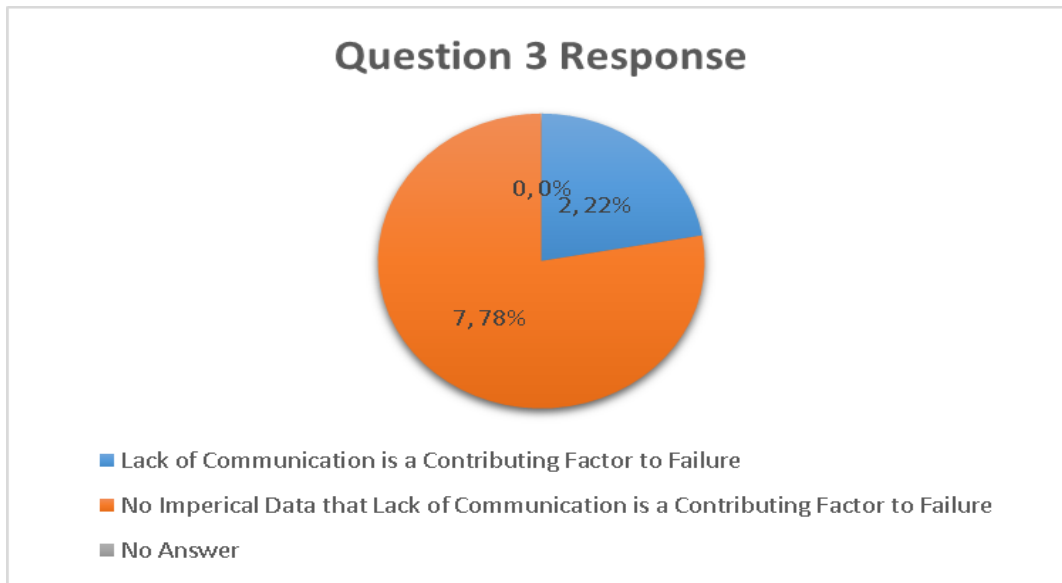
In this example, of the nine Acquisition Professionals that we interviewed, seven responded to this question saying that no empirical existed to prove that lack of communication was a contributing factor to program failure. The two individuals, who responded that lack of communication was a contributing factor to program failure, supported their responses with anecdotal data based on their individual experiences. This research team was unable to confirm with factual evidence that in fact the lack of communication was a contributing factor to the programs failures.

Twelve interview questions were developed and designed using the interpretive phenomenological analysis method. This will support this research and analysis of the primary and secondary research questions:

PRIMARY: To what degree does early and ongoing communication between the program manager and contracting officer, impact the success or failure of Army acquisition programs?

SECONDARY: Are problems with RFPs and Contracts related to poor communication and collaboration between the KO and PM?

SECONDARY: Does current acquisition policy, law, training, and regulation impact success/failure rates of contract execution?

We use the results of this data extrapolation and examination to support our Common Theme Analysis and assists with synthesizing recurring elements of interview responses; which we discuss in detail in Chapters IV and V.

D.   SUMMARY

In this chapter, we showed how we performed our analysis against our chosen models and framework. We first identified the basic foundation for communications as well as some new data regarding observable and recordable communication interactions as they relate to team dynamics. Then, with the TIPS model, we sought to apply a framework to which we could analyze the current acquisition environment against personnel, platforms, and protocols. Finally, we reviewed how our research team chose to analyze the data received during our interview process, showing common themes and general observations among the respondents. In Chapter IV, we present the findings of our data analysis. Statistical evidence is presented that shows current performance metrics of the Defense Acquisition System and findings of interview data that provide common themes dealing with PM/KO communication that are evaluated against the TIPS and communications models discussed.

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IV. FINDINGS AND RESULTS

This chapter presents the quantitative and qualitative data collected as a part of this research. We use the framework outlined in Chapter III to analyze the data to determine whether or not a problem exists within the DAS, to what degree any problems may be tied to contracting, and the impact communication between the PM and KO has on those problems. Quantitative data in the form of DAS statistics (Cost, Schedule, and Performance), PARCA reports, and a case study are presented to validate the existence of a problem and to provide grounds for the purpose of this research. Common themes extracted from interview data will comprise the qualitative data set. These themes were extracted using the IPA method outlined in Chapter III. The published baselines of the Schramm communication model (Schramm, The Process and Effects of Mass Communication, as cited in Certo, & Certo, 2006, p. 332) and the Yoder TIPS model are compared against the current themes. From these comparisons, we pose recommendations to improve key areas, bringing the system as a whole closer to the models for success being used for comparison.

As stated previously, success is measured in terms of delivering a suitable, effective, and supportable capability to the warfighter, on time and within budget. Failure to the contrary is measured by shortfalls in these areas. It is important to recognize, however, that a single failure marker in a program does not mean that the program as a whole has failed. It generally takes repeated and un-remedied failures to cancel a program. For example, a program may have a baseline budget breach due to a problem with a critical technology, and after a re-baseline, the program delivers a much-needed effective capability. While this would display a cost failure marker due to the program baseline breach, it is the contention of these researchers that this program example would be considered an overall success.

A. PERFORMANCE OF THE DEFENSE ACQUISITION SYSTEM

The Performance of the Defense Acquisition System (DAS) is an annual report that is produced by the USD(AT&L) to capture current statistics and trends regarding

how well the Department of Defense is performing at acquiring goods and services for the country. The report covers metrics related to the three main trade-off elements: cost, schedule, and performance, as well as other supporting statistics and information. At the time of this writing, the latest version of the report is the 2014 edition. This section will present relevant statistical data from the report showing the current status of the success/failure markers being considered and the effects of communications on them. By showing that there is room for improvement in specific areas, the utility for research into contributing factors and grounds for providing recommendations is validated.

1.   Cost Growth as a Marker

Cost growth, or rather the lack thereof, is a key marker for program success. Excessive cost growth leads to baseline breaches and in severe cases can trigger a Nunn-McCurdy breach ultimately causing the cancellation of a program. Ineffective communications, meaning that the sender and receiver are not transferring information in a manner without loss, can often lead to cost growth. This can be caused by the selection of an ineffective contract type for the requirement, schedule slips due to missed deadlines, and a myriad of other potential causes. For the period covered by the 2014 performance report, the Army showed a slight negative trend in development contract cost growth, at an amount slightly lower than the DOD-wide trend (Figure 10). This represents a slight increase, but essentially static, final-margin trend of about 6 percent, which per the report is statistically insignificant but is included here for completeness (OUSD[AT&L], 2014, p. 60).

Figure 10. Army Development Contract Cost-Growth and Final-Margin
Trends (2000–2012)
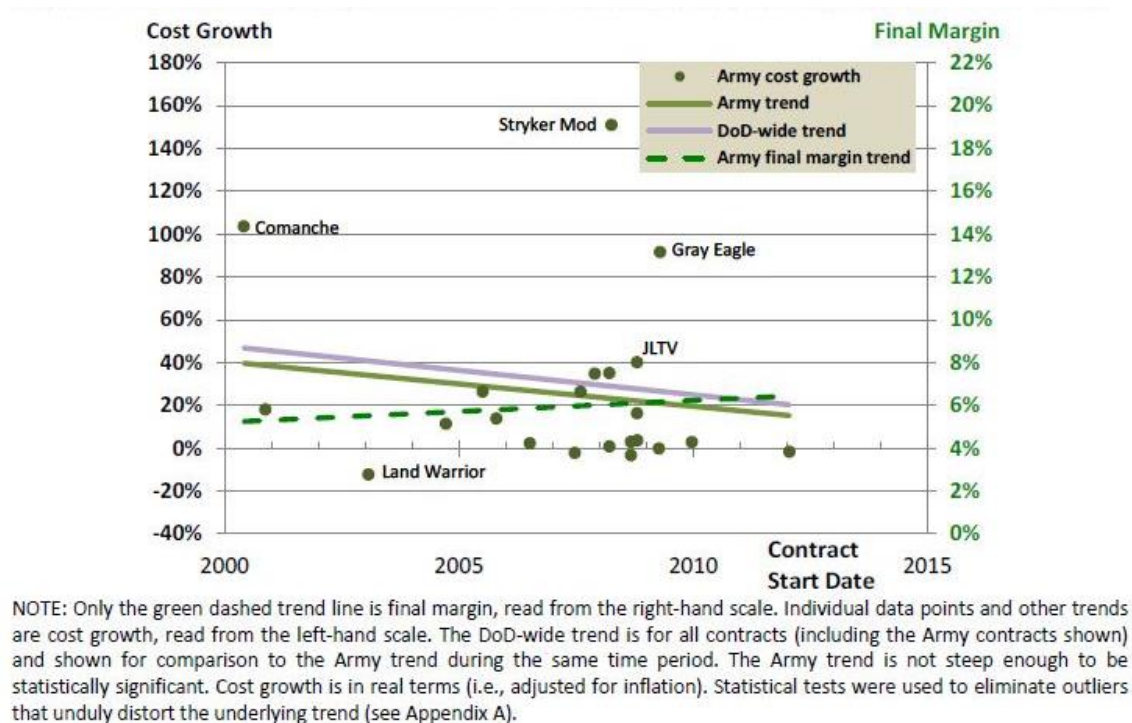
From Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics (OUSD[AT&L]). (2014, June 13). *Performance of the Defense Acquisition System, 2014 annual report.* Washington, DC: Author. Retrieved from http://bbp.dau.mil/docs/Performance-of-Defense-Acquisition-System-2014.pdf

For the same period, the Army showed an increasing rate of production contract cost growth and a trend that is divergent with that of the DOD as a whole (Figure 11). This represents a final-margin trend that, according to the report, is statistically significant and peaks with the last data point sometime in 2010 with a value of just under 17% and is "driven by [the] dominance of FFP [firm fixed price] contracts in this sample" (OUSD[AT&L], 2014, p. 68).

Figure 11. Army Production Contract Cost-Growth and Final-Margin Trends (2004–2010)
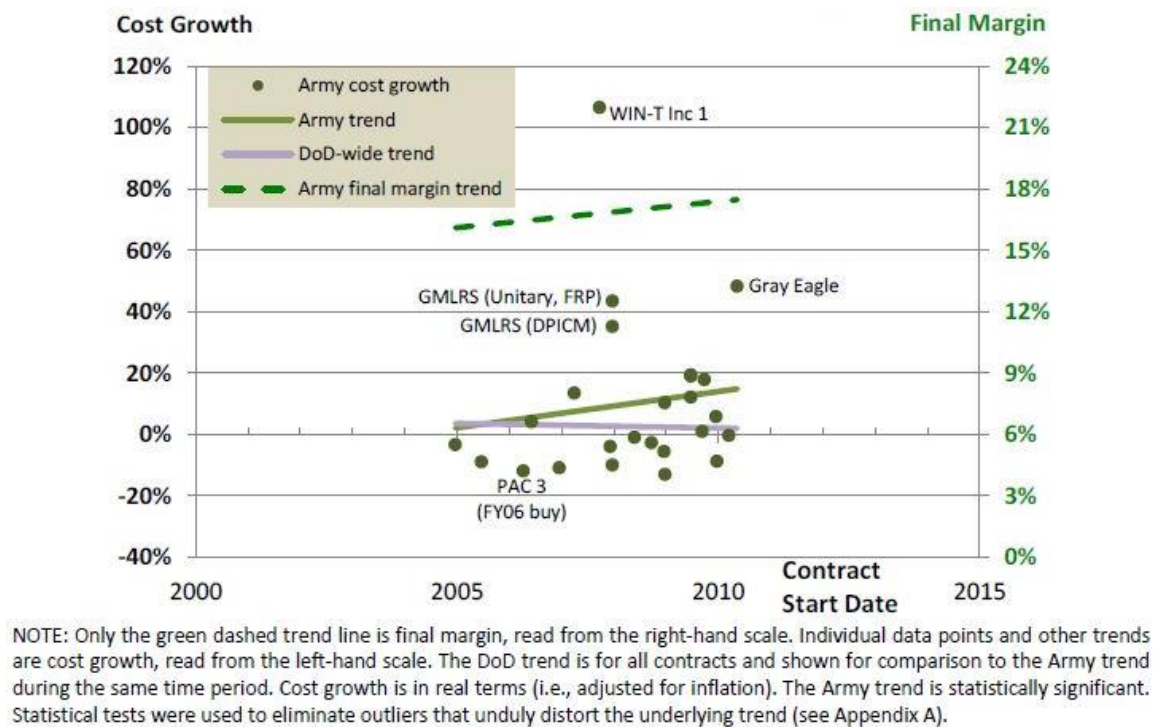
NOTE: Only the green dashed trend line is final margin, read from the right-hand scale. Individual data points and other trends are cost growth, read from the left-hand scale. The DoD trend is for all contracts and shown for comparison to the Army trend during the same time period. Cost growth is in real terms (i.e., adjusted for inflation). The Army trend is statistically significant. Statistical tests were used to eliminate outliers that unduly distort the underlying trend (see Appendix A).

From Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics (OUSD[AT&L]). (2014, June 13). *Performance of the Defense Acquisition System, 2014 annual report.* Washington, DC: Author. Retrieved from http://bbp.dau.mil/docs/Performance-of-Defense-Acquisition-System-2014.pdf

As previously stated, perhaps the biggest failure marker in acquisition programs is the occurrence of a Nunn-McCurdy breach. The Nunn-McCurdy Act of 1982 states that a "significant cost growth [breach] means … a percentage increase in the program acquisition unit cost of at least 15 percent over the … current baseline estimate; or at least 30 percent over the … original baseline estimate. Critical cost growth [breach] means … a percentage increase in the program acquisition unit cost of at least 25 percent over the … current baseline estimate; or at least 50 percent over the … original baseline estimate." (sec. (a) para. 4–5) Figure 12 shows the number of Nunn-McCurdy breaches for the years covered in the 2014 version of the annual report. Figure 13 shows the same data grouped by service rather than by year of breach. The number of breaches is clearly improving; however, breaches still do occur. Early communication cannot guarantee a flawless acquisition, but lack of communication creates an environment that causes problems that

can lead to a baseline breach. For example, on March 30, 2011 the Joint Tactical Radio System reported a critical Nunn-McCurdy breach to the USD(AT&L), which according to the root cause analysis was contributed to by the selection of a cost-plus contract type and the decision as part of the acquisition strategy to exclude Boing from the production contract (OASD[A], 2011c, p. 1). This type of failure will be reduced when the PM and KO are collaborating from program initiation on the acquisition strategy, contracting strategy, and the acquisition requirements package (ARP). Further data supporting this claim is presented in this chapter's Section D, Interview Analysis.

Figure 12.   Nunn-McCurdy MDAP Breaches per SAR Year (1997–2013)
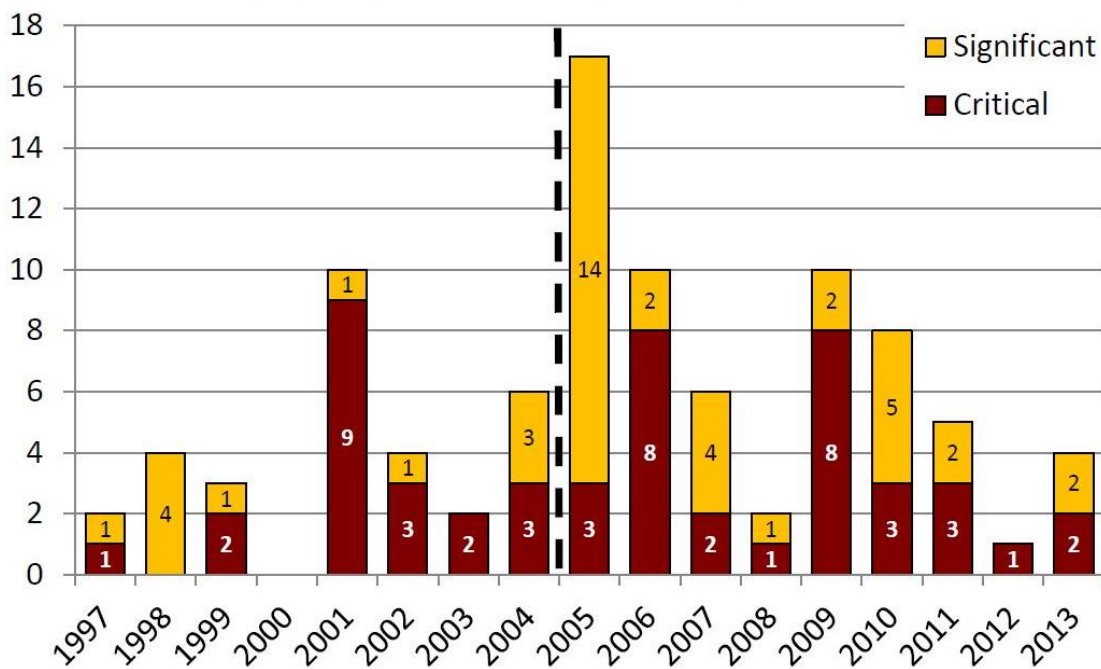
NOTE: The criteria for breaches were changed in NDAA 2006, affecting counts starting with 2005. Breaches are determined using "base-year" dollars (i.e., adjusting for inflation). This plot includes the number of breaches in each annual SAR reporting cycle, which nominally equates to calendar year but may include updates early in the following calendar year from the President's Budget Request. Breaches in different years for different thresholds or baselines for the same program are included in each respective year. If a program reported both a significant and critical breach in the same year, it is only plotted here as a critical breach. Nunn-McCurdy breach reporting was established in the NDAA for FY1982, so the count shown here for 1997 may differ from that by others, depending on whether prior notification for the same breach without rebaselining has occurred.

From Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics (OUSD[AT&L]). (2014, June 13). *Performance of the Defense Acquisition System, 2014 annual report.* Washington, DC: Author. Retrieved from http://bbp.dau.mil/docs/Performance-of-Defense-Acquisition-System-2014.pdf

Figure 13.   Nunn-McCurdy MDAP Breech Rates by Component (1997–2013)

Component	Total # of Programs	# of Programs that Ever Breached	Breach Rate	# of Programs with at Most a Significant Breach	# of Programs with a Critical Breach
DoD	12	7	58%	2	5
Army	53	19	36%	9	10
Air Force	53	16	30%	4	12
Navy	63	16	25%	5	11
Total	181	58	32%	20	38

NOTE: The categorization of MDAPs by Component has been revised slightly since last year's USD(AT&L) report. If a program had both a significant and critical breach, it was only included in the "programs with critical breach" column. Not adjusted for quantity or other variances. "DoD" programs are programs categorized as DoD programs in SAR reporting, which include Joint programs and programs (such as Chemical Demilitarization) managed by an organization other than the Air Force, Army, or Navy. Breaches are determined using "base-year" dollars (i.e., adjusted for inflation).

From Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics (OUSD[AT&L]). (2014, June 13). *Performance of the Defense Acquisition System, 2014 annual report.* Washington, DC: Author. Retrieved from http://bbp.dau.mil/docs/Performance-of-Defense-Acquisition-System-2014.pdf

2.   Schedule Growth as a Marker

To determine the current success rates of the Defense Acquisition System Schedule, the second marker we investigated was schedule growth. Without effective communications between the PM and KO, schedule growth is highly likely to occur. This can be caused by failure to collaborate on the requirements package, causing a necessary revision that is not planned for in the program timeline—as well as many other examples not listed here. The schedule growth for Army development contracts has shown marked improvement. With a trend that shows the schedule growth to be decreasing and converging with the DOD wide statistic, the last data point shows the Army schedule growth for development contracts to be just below zero years in 2012, meaning that the contracts are completed ahead of schedule (Figure 14). This data is, according to the report, statistically significant (OUSD[AT&L], 2014, p. 62).

Figure 14.   Army Development Contract Schedule-Growth Trends (2000–2012)
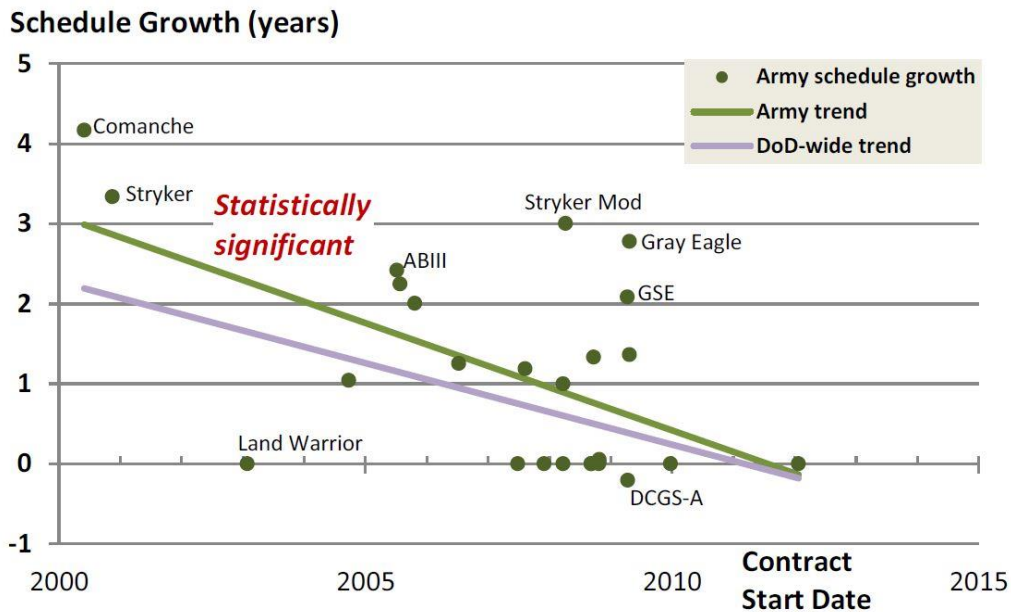
NOTE: The Army trend is statistically significant. The DoD trend is for all contracts (including the Army contracts shown) and shown for comparison to the Army trend during the same time period. Statistical tests were used to eliminate outliers that unduly distort the underlying trend (see Appendix A).

From Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics (OUSD[AT&L]). (2014, June 13). *Performance of the Defense Acquisition System, 2014 annual report.* Washington, DC: Author. Retrieved from http://bbp.dau.mil/docs/Performance-of-Defense-Acquisition-System-2014.pdf

For the same period, the metrics also show that the Army has an increasing production schedule growth trend that has surpassed and is divergent from the DOD total trend in 2009. The last reported data point, in 2010, shows a slightly higher than 0.5 (year) schedule growth for Army production contracts (Figure 15). According to the report (OUSD[AT&L], 2014 p. 70), this metric is not statistically significant but is included here for completeness.

Figure 15.   Army Production Contract Schedule-Growth Trends (2005–2010)
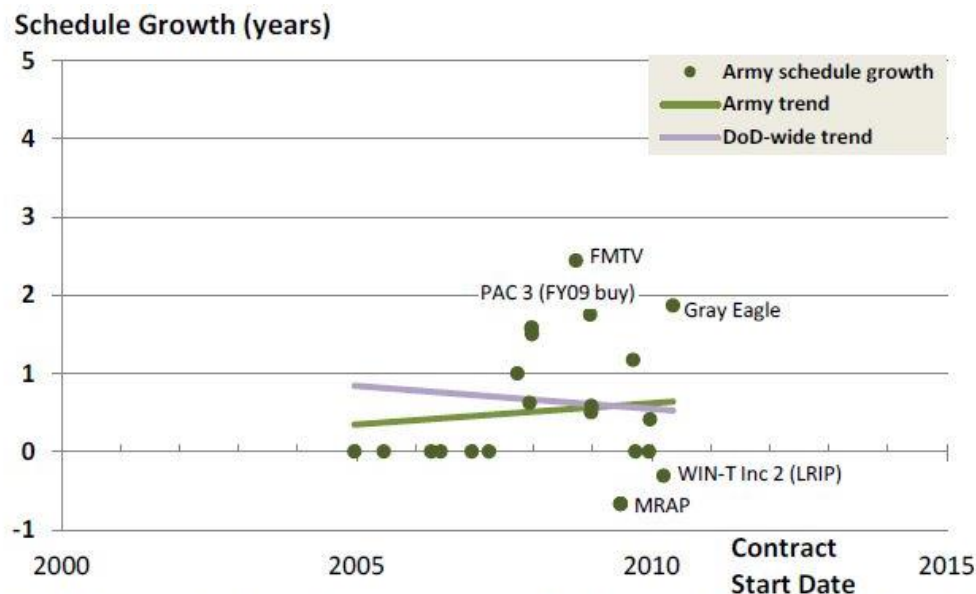
NOTE: The DoD trend is for all contracts and shown for comparison to the Army trend during the same time period. The Army trend is not statistically significant. Statistical tests were used to eliminate outliers that unduly distort the underlying trend (see Appendix A).

From Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics (OUSD[AT&L]). (2014, June 13). *Performance of the Defense Acquisition System, 2014 annual report.* Washington, DC: Author. Retrieved from http://bbp.dau.mil/docs/Performance-of-Defense-Acquisition-System-2014.pdf

3.   Performance as a Marker

The third maker of success/failure that we examined is performance. While the performance of a system is the responsibility of the program manager, without effective communications between the PM and KO creating a legally binding contract that captures requirements representing the desired performance is difficult. The KO is tasked with writing contracts for procurable requirements, and, as such, they must be verifiable. When a collaborative approach between the PM and KO is not used, the resulting requirements package contains a patchwork of the original requirements and language ensuring that they are verifiable. Once produced, the lack of continuity in the requirements package can be seen in the form of missing capability, or less than desired performance in the areas of suitability, survivability, and maintainability. Metrics show that the Army has done exceptionally well at developing effective systems, especially in light of the performance of "Other DOD" systems. It is worth noting, however, that the

Army has seen a reduction in the number effective programs over the last rating period of the report (2009–2013) (Figure 16).

Figure 16.   Percent of Military Department Programs Rated Effective (1984–2013)

Source: DOT&E reports. NOTE: DoD programs were Joint or other programs that are not exclusive to a single Component. Sample sizes differ between effectiveness and suitability for some Components because there was not always a definitive binary judgment for effectiveness and suitability in all reports.
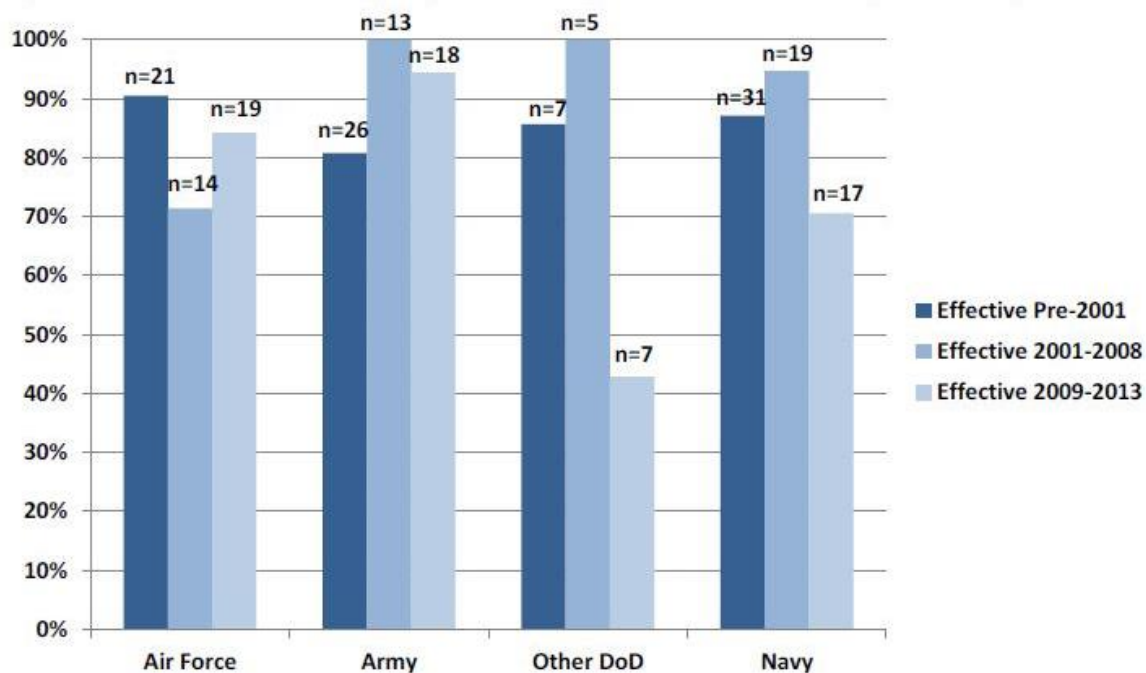
From Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics (OUSD[AT&L]). (June 13, 2014). *Performance of the Defense Acquisition System, 2014 annual report.* Washington, DC: Author. Retrieved from http://bbp.dau.mil/docs/Performance-of-Defense-Acquisition-System-2014.pdf

Metrics for suitability paint a different picture, however, in that while showing slight improvement in the last rating cycle (2009–2013), the percentage of suitable systems is slightly below 75%. While this may not be representative of an overall failure of the procurement system, it does show that many programs still struggle with this marker of success/failure (Figure 17) (OUSD[AT&L], 2014, p. 56).

Figure 17.   Percent of MDAPs by Military Department Rated Suitable (1984–2013)
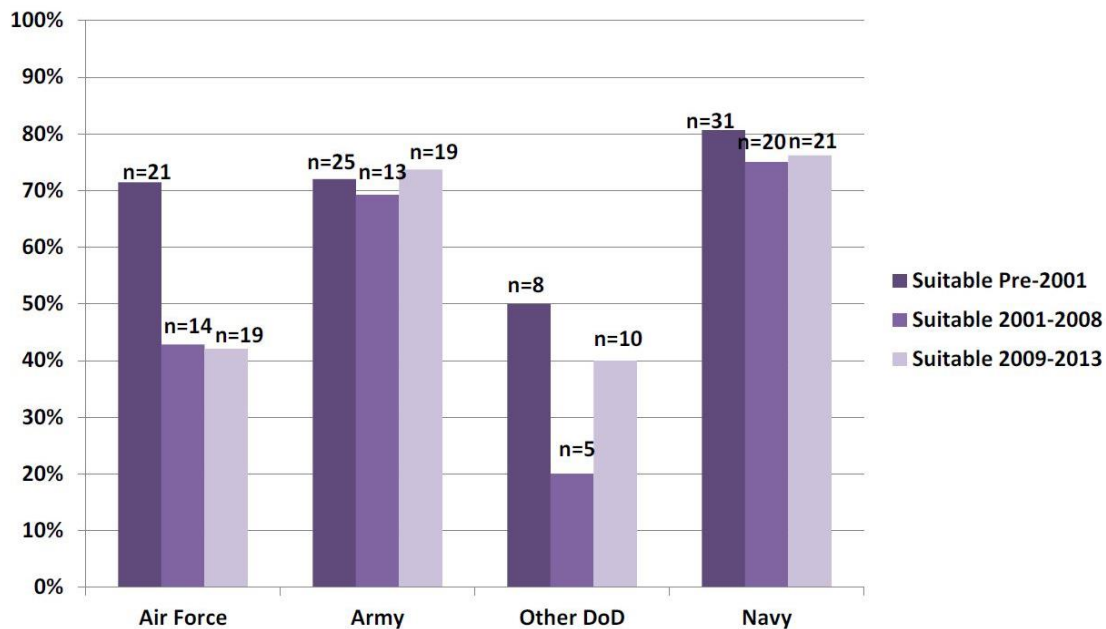
Source: DOT&E reports. NOTE: DoD programs were Joint or other programs that are not exclusive to a single Component. Sample sizes differ between effectiveness and suitability for some Components because there was not always a definitive binary judgment for effectiveness and suitability in all reports.

From Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics (OUSD[AT&L]). (June 13, 2014). *Performance of the Defense Acquisition System, 2014 annual report.* Washington, DC: Author. Retrieved from http://bbp.dau.mil/docs/Performance-of-Defense-Acquisition-System-2014.pdf

Overall, the Army is doing well with development contracts in terms of cost and schedule. On the other hand, production contracts not only need improvement but also trend reversals in these areas (Cost and Schedule). The data presented for Army program performance was not considered for production versus Development; however, collectively the programs being procured are highly effective and only about 75 percent suitable (OUSD[AT&L], 2014, p. 56). This represents another key success/failure marker that has plenty of room for improvement.

B.   PERFORMANCE ASSESSMENTS AND ROOT CAUSE ANALYSIS

The following section examines several reports and data from the office of PARCA to investigate contributing factors to poor program performance. This would be indicated by the success/failure markers: cost, schedule, and performance, discussed

previously. With evidence that contracting problems, the details of which will be laid out in the following paragraphs, lead to problems with program performance, a correlation between communication effectiveness and contracting product outcomes becomes useful for identifying recommendations for improving program performance.

1.   Enterprise Resource Planning

An analysis of enterprise resource planning (ERP) Systems was initiated in response to the GAO report entitled, "DOD Business Transformation – Improved Management Oversight of Business System Modernization Efforts Needed" dated October 2010. The GAO report outlined a 28%–641% cost growth for the reviewed programs based on a Milestone A, the decision review preceding the technology maturation and risk reduction phase, estimate (2010). According to the OASD[A] office for PARCA (2011), the ERP programs from inception were troubled due to the failure to completely understand the requirements and the complexity of the DOD business processes. Their report states that because of this poor understanding, the acquisition strategy is flawed with unrealistic cost and schedule baselines. Additionally, they found that this issue is compounded by policy requiring the use of a FFP contract for acquisition of ERPs. FFP contracts are completely ineffective for acquiring systems where a thorough understanding of the final product is not well understood right from program inception. This presents a historical example of a PM/KO communication channel that was ineffective. Effective PM/KO collaboration in this example should have captured the lack of definition of the program requirements in the acquisition strategy and then coupled that to a contracting strategy in support of the evolution of those requirements. Additionally, a collaborative approach to obtain a waiver for the fixed-price contract type policy should have been pursued to increase the opportunity for program success. The report also stated that the timing of the system integration contract being released prior to the complete blueprinting of the entire business process was a contributing factor as well. Additionally, the use of time and materials (T&M) contracts for system modifications eliminated any incentive structure for the contractor to reduce workforce and cost. Finally, due to the reporting requirements for the FFP contract vehicles, overall

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situational awareness was reduced and earned-value data was limited, if available at all (OASD[A], 2011a, pp. 1–3).

The ERP case is a good example of how a lack of communication and collaboration between the PM and KO can lead to the KO's poor understanding of the status of the requirements definition process. This can lead to the improper use of contract types for different phases of the acquisition. This leads ultimately to poor program performance and, in this case, causes a baseline breach.

2. Global Hawk

According to a 2011 report put out by the OASD[A] PARCA office, an analysis into the Global Hawk program reveals that contracting causes led to more than a 25% increase in the program acquisition unit cost (PAUC) over the 2007 baseline. They find that while the primary cause for cost growth in this program is the addition of requirements and the deferral of development on certain known requirements, these problems were exacerbated due to the contract structure the government was "unable to motivate Northrup-Grumman Corporation to deliver on-time products of acceptable quality" (OASD[A], 2011b, pp. 1–3). Stated another way, the contract type (strategy) employed by the acquisition team in the acquisition strategy was ineffective at driving contractor results. This failure to drive contractor performance leads to schedule slips and performance issues with the delivered products.

3. JTRS

The Joint Tactical Radio System reported a critical Nunn-McCurdy breach to the USD(AT&L) on March 30, 2011 (OASD[A], 2011c, p. 1). As published in a 2011 report by the OASD[A] PARCA office, the program experienced a 90% increase in PAUC over their current baseline, which was largely attributed by the Army to a decrease in the number of radios ordered. PARCA determined the root cause to be an inadequate analysis of an affordable quantity of radios to establish the program baseline. Additional findings indicate that this issue was compounded by the fact that the requirements were poorly defined from program inception, and the cost-plus contract type issued to Boeing, along with the explicit exclusion from production, did not adequately incentivize them to

reduce unit production costs (OASD[A], 2011c, pp. 1–2). In this example, the acquisition team failed to create an acquisition strategy that included contract type selection (strategy) that would effectively reduce cost risk to the program.

4. Big Picture

Figure 18 highlights the root cause analyses performed by PARCA, both statutory and discretionary between 2010 and 2012.

Figure 18.   PARCA Root Causes Analyses (Statutory and Discretionary, 2010–2012)

	Dominant
10 of 18 (56%)	**Poor management performance**
	• Systems engineering
	• Contractual incentives
	• Risk management
	• Situational awareness
5 of 18 (28%)	**Baseline cost and schedule estimates**
	• Framing assumptions
4 of 18 (22%)	**Change in procurement quantity**
	Infrequent
1 of 18	**Immature technology, excessive manufacturing, or integration risk**
2 of 18	**Unrealistic performance expectations**
1 of 18	**Unanticipated design, engineering, manufacturing or technology issues**
None	**Funding inadequacy or instability**

From Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics (OUSD[AT&L]). (June 28, 2013). *Performance of the Defense Acquisition System, 2013 annual report*. Washington, DC: Author. Retrieved from http://bbp.dau.mil/doc/Report_on_the_Performance_of_the_Def_Acq_System.pdf

Poor management performance to include contractual incentives was present as a root cause in greater than 50% of the Nunn-McCurdy breaches analyzed by PARCA for this period (OUSD[AT&L], 2013, p. 34). This proves that contracting does play a role in program success. This is not meant to imply, however, that the contracting incentives are the sole responsibility of the KO, but rather this emphasizes the importance of a collaborative solution that must be reached between the PM and KO with respect to

acquisition type, execution capabilities, and risk. This evidence speaks to the point that while poor or lacking communication between the PM and KO is not likely to be the sole cause of a program breach or failure, it is likely that improvement in this area will reduce the chances that a program will fail for this particular reason.

C.   CASE STUDY

Experience shows that there is disparity amongst contracting shops with regard to how communication works throughout the Army Contracting Command. Case in point: In 2010, the Software Engineering Center Tactical Logistics Directorate (SEC-TLD) at Fort Lee, Virginia was informed by the National Capital Region Contracting Center (NCRCC) that all logistics information technology (LOG IT) contracts would need to transition to a new contracting agency according to one of the authors, Loya. The Communication Electronics Command, Software Engineering Center (CECOM, SEC) directed that SEC-TLD take the action to move the LOG IT contracts to the Army Contracting Center - Aberdeen Proving Ground (ACC-APG) for all contracting requirements necessary to support the LOG IT systems. Because NCRCC was closing, the determination was made through an agreement amongst NCRCC, ACC-APG, and CECOM, SEC: The existing Property Book Unit Supply Enhanced (PBUSE) contract (with one option year remaining) would not transition but, instead, ACC-APG would compete with a new contract that would be awarded by February 1, 2011, versus trying to manage the last contract option year that remained under the existing PBUSE contract. All documentation and files associated with PBUSE were sent to ACC-APG on May 21, 2010 and despite efforts by SEC-TLD to open the lines of communication with ACC-APG there was "radio silence" until July 27, 2010. When the lines of communication were finally opened, the SEC-TLD acquisition team was directed not to communicate directly with the ACC-APG contracting officer; instead, all communications would go through a contracting analyst located at the CECOM, SEC headquarters. This process is contrary to regulatory direction and guidance listed in the FAR and the DOD 5000 Series. This stifling of communications fractured the personnel pillar of TIPS and disconnected the overlapping field of experience communication model (Figure 19) that is desired

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between the PM (SEC-TLD) and the KO (ACC-APG) and, as Schramm (as cited in Certo, & Certo, 2006, p. 331) suggests, is required to ensure successful communications.

Figure 19.   Overlapping Field of Experience Communication
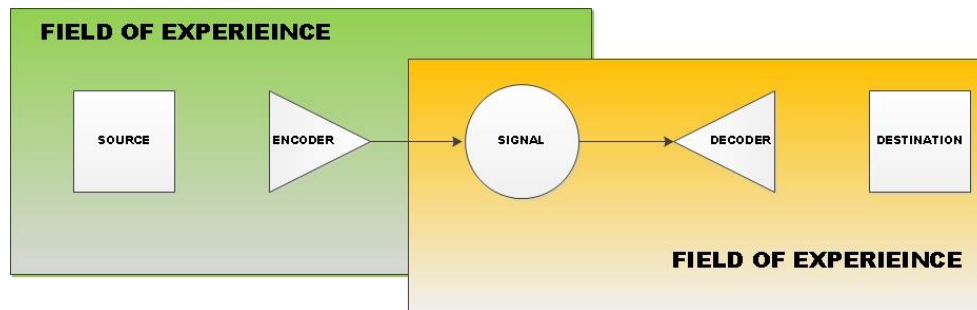
From Certo, S. C., & Certo, S. T. (2006). *Modern management*. Upper Saddle River, NJ: Prentice Hall.

There was never a positive communications protocol between SEC-TLD and the KO at ACC-APG. The process was disorganized and convoluted without a dedicated contracting officer assigned to support the life cycle of the PBUSE contract effort. As evidenced in Figure 20, when the lines of communication were finally opened on July 27, 2010, the process of developing the acquisition requirements package started with less than six months left until the proposed award date of February 1, 2011. Realizing that ACC-APG was not going to get a new contract in place before the period of performance ended under the original NCRCC contract, arrangements were made for NCRCC to execute the last remaining option year on the existing contract and then ACC-APG would assume management of that contract.

Figure 20.   PBUSE PPSS Re-compete Timeline 2012
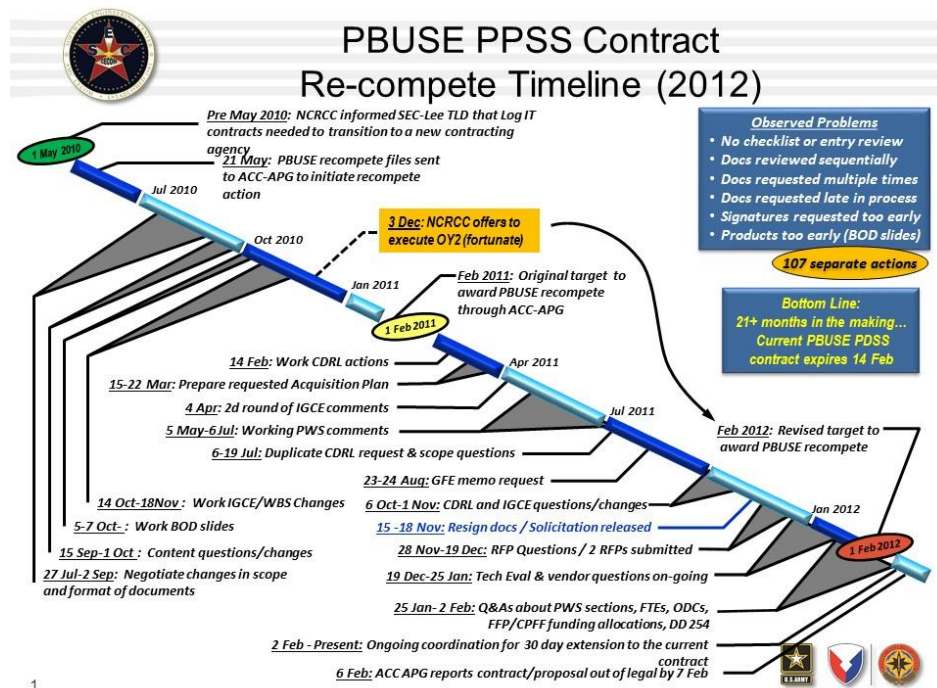
From W. Sarvay, personal communications, August 19, 2015.

After 21 plus months of effort, a new PBUSE contract was finally awarded on February 13, 2012. The period of performance for the new contract was for one base year plus one option, and it was awarded to the vendor with the lowest price technically acceptable (LPTA) proposal. LPTA is advantageous to the government as long as the price offered is realistic. In the case of the PBUSE contract award, the price was too low, resulting in the contractor being challenged to attract and hire personnel with the requisite qualifications needed for the salaries the company was able to pay. To remedy the problem, the KO was forced to modify the contract and to add additional funds to cover the extra costs; this allowed exceptions to some of the qualifications and the staffing timetables to compensate for the vendor's inability to staff properly. It was unilaterally decided that the best contract vehicle to pursue was a cost plus fixed fee (CPFF). The KO would accomplish this with no consideration given to the SEC-TLD recommendation that a Time & Materials (T&M) type contract was better suited for the type of work in a Post Production System Support environment.

Different contract types are available for a reason. For example, T&M (Labor Hour) type contacts have been very effective when considering the nature of the services required to support the LOG IT systems; it affords flexibility for the PM to add or reduce resources as needed and is less costly to administer over a CPFF type of contract. SEC-TLD had a very successful history with T&M contracts; which was attributed to strong and thorough surveillance plans. (A. Ford, personal communications, April 21, 2015)

No sooner was the PBUSE contract awarded in February 2012 than actions for the re-compete of that contract began. This was to ensure that when the one option period of performance was complete that a new contract would be in place. Again, the process or lack thereof that SEC-TLD was forced to follow in working with ACC-APG failed. As shown in Figure 21, SEC-TLD was forced to execute a six-month extension covering the period February 10, 2014–August 9, 2014; then it also executed a second six-month extension from August 10, 2014–February 9, 2015 which cost SEC-TLD $5.2M to execute (W. Sarvay, personal communications, August 19, 2015).

Figure 21.   PBUSE PPSS Re-compete Timeline 2014
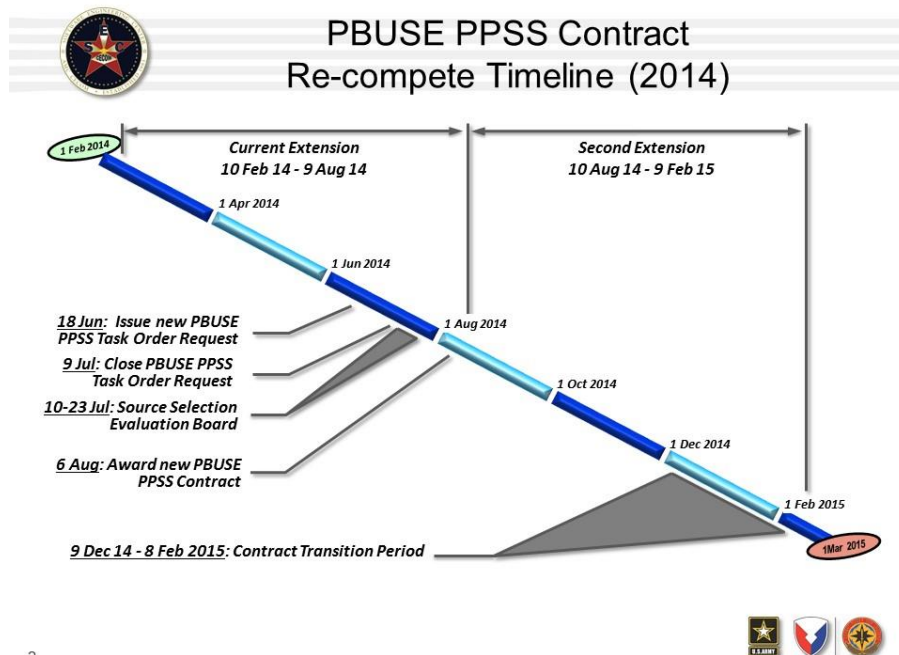

From W. Sarvay, personal communications, August 19, 2015.

In December 2014, a CPFF contract was awarded with a base year plus two option years at a cost of $3M. Although the contract was awarded as a LPTA, there was a difference in this award over the first PBUSE contract awarded under ACC-APG: It followed the guidance of Better Buying Power 2.0 and the SEC-TLD successfully argued that Technically Acceptable selection criteria needed to be defined to ensure that the services provided by the contractor would be of adequate quality. This effort resulted in a contract awarded to a vendor that was capable of performing the work required and staffing the project with personnel that had the requisite skill sets to perform the work.

As evidenced in this PBUSE example, the failure to effectively communicate between the PM and KO resulted in additional costs and schedule slips for SEC-TLD. Not only were there additional costs to allow the contractor to properly staff the contract, but there were additional unplanned costs associated with two contract extensions in 2014 to allow for ACC-APG to release the RFP, conduct the source selection, and award the new contract. The cost of the two contract extensions ($5.2M) coupled with the cost of the contract that was awarded in December 2014 ($3M) resulted in an additional $2M of taxpayer. This could have been avoided if the process that ACC-APG enforced was more inclusive of the entire integrated acquisition team, instead of the one that was followed that alienated and disenfranchised SEC-TLD from the effort.

At the beginning of FY15, oversight and management of the LOG IT transitioned from the SEC to Program Executive Office, Enterprise Information Systems (PEO-EIS), product director, Logistics Information Systems (PD LIS). Along with this transition, all associated contracts supporting the LOG IT systems were moved from ACC-APG to Army Contracting Center - Rock Island (ACC-RI). A stark contrast to ACC-APG, ACC-RI has robust communications with their customers. As shared by PD LIS, there were two dedicated KOs assigned to support the five systems in the portfolio (R. Daniels, personal communications, June 3, 2015). Before the contracts transferred, the entire contracts division (division chief, team chief, and staff) from ACC-RI visited PEO EIS to meet with the LIS Product Director (PD). They discussed how the transition would happen and what the expectations for how the contracting team envisioned the relationship being formed between the two organizations would be structured. According

to one of the authors, Loya, the very first comment from the division chief at the start of the meeting was that customer satisfaction was first and foremost for his team. The division chief articulated that they were there to provide the best possible service to ensure a legal and binding contract was put into place that satisfied the PM's requirements and enabled success. This attitude by the ACC-RI team aligns directly with the guiding principles outlined in both Figure 22 and in the FAR. This is the framework for the integrated acquisition team to leverage throughout the acquisition process.

Figure 22.   Standards of Performance for the Acquisition System
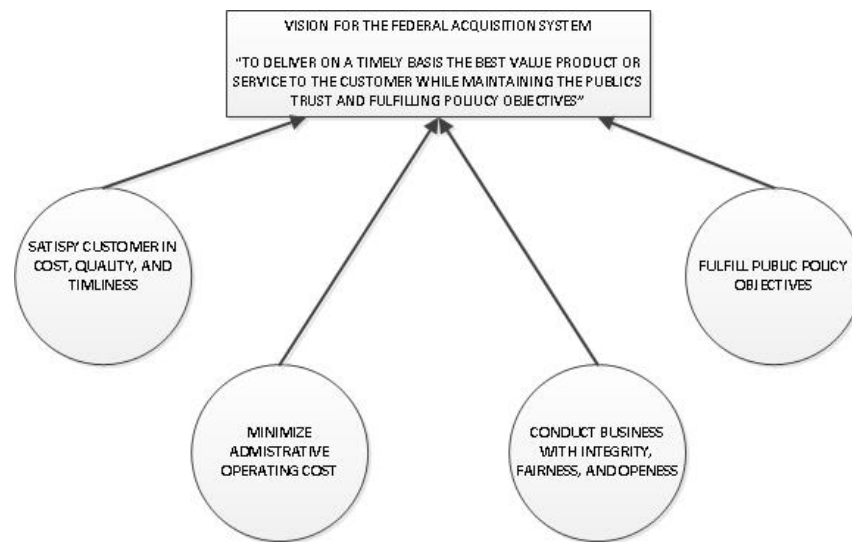
From Engelbeck, R. M. (2002). *Acquisition management.* Vienna, VA: Management Concepts.

There are weekly meetings between the KO and PM to discuss the performance of current contracts and any requirements for upcoming contracts. On a quarterly basis, the division chief, team chief, and the KO travel from Rock Island to PEO-EIS and conduct an in-progress review (IPR) with the PD. The most positive aspect of working with ACC-RI over ACC-APG is that the KO advises the PD and makes best recommendations within the framework of contract law and the FAR for the PD to consider. Currently the PD is in the process of developing a PWS for a program management system support (PMSS) contract re-compete and a separate PWS for a System Sustainment contract re-

compete. For each effort, the KO has been involved every step of the way providing guidance, recommendations, options on contract type, and guidance on how to properly document and justify the type of contract the PD wishes to pursue. This approach to customer satisfaction aligns directly the Key Elements of Customer Satisfaction as shown in Figure 23.

Figure 23.   Key Elements of Customer Satisfaction
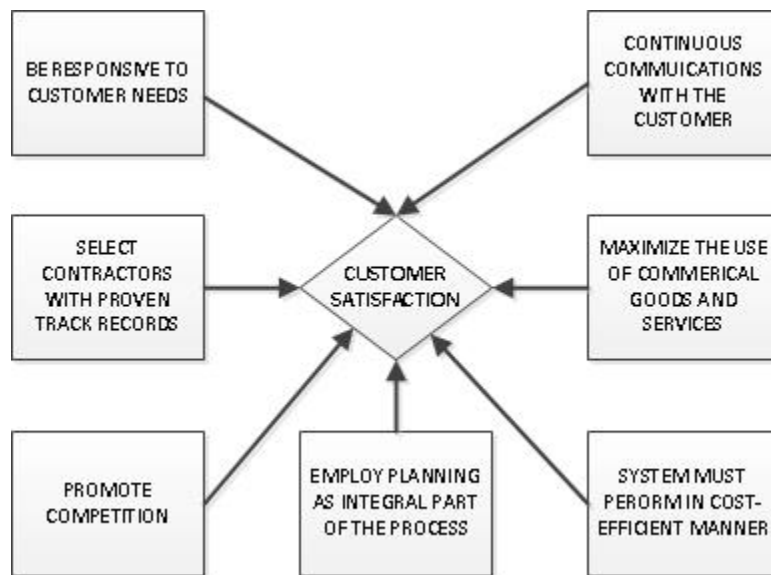
From Engelbeck, R. M. (2002). *Acquisition management.* Vienna, VA: Management Concepts.

The contrast of how ACC-APG and CC-RI choose to communicate with their customers is very evident. The APG approach to customer service is that communication with the customer is non-existent and that the customer had no say in how their requirements will be satisfied. The RI approach embraces full and open communications, and the customer is integral to making the right decisions to ensure that requirements are satisfied. ACC-RI provides dedicated KOs to support PD LIS that has resulted in fostering a positive and collaborative working relationship between teams. There has not been one instance where the PD has made a request of the KO and the KO has immediately said no. Instead, the KO takes the request, conducts the research, asks

questions, and formulates an answer based on both what is in the realm of possibility and what is prescribed by contract law and the FAR.

D.   INTERVIEW ANALYSIS

The interviewees for this research were selected based on their expert knowledge and real-world experience in either the Program Management or Contracting fields within the DOD. Participants from ere selected and interviews for this research from: program executive offices, Executive Director White Sands Missile Range (Former Mine-Resistant Ambush Protected [MRAP] PM), Program Management offices, product director offices, PEO EIS Technology Application Office in Fort Detrick, Maryland, and local contracting offices at Fort Lee, Virginia, Fort Belvoir, Virginia, and White Sands Missile Range. We conducted nine interviews with six of these from the PM functional area and three from contracting. This disparity is due to subject matter expert availability and access. Chapter V contains recommendations for further study with a possible consideration of expanding this data set.

From the interview data collected, the interpretation process outlined in Chapter III was used to extract the following common themes. Themes appear in order of relevance to the topic of this research. Each is compared against the Schramm communications model (Schramm, The Process and Effects of Mass Communication, as cited in Certo, & Certo, 2006, p. 332), then against the Yoder TIPS model, and finally recommendations are made for better alignment of the theme with the models for success.

1.   Theme 1 - Communication

Effective communication between the PM and KO is absolutely critical to the success of any procurement. Effective communication is that which exchanges information with minimal loss or distortion. This is especially true prior to contract award. This point was agreed upon by all interviewees (Figure 24), and it generated some of the most passionate responses.

Figure 24.   Interview Question 1 Responses
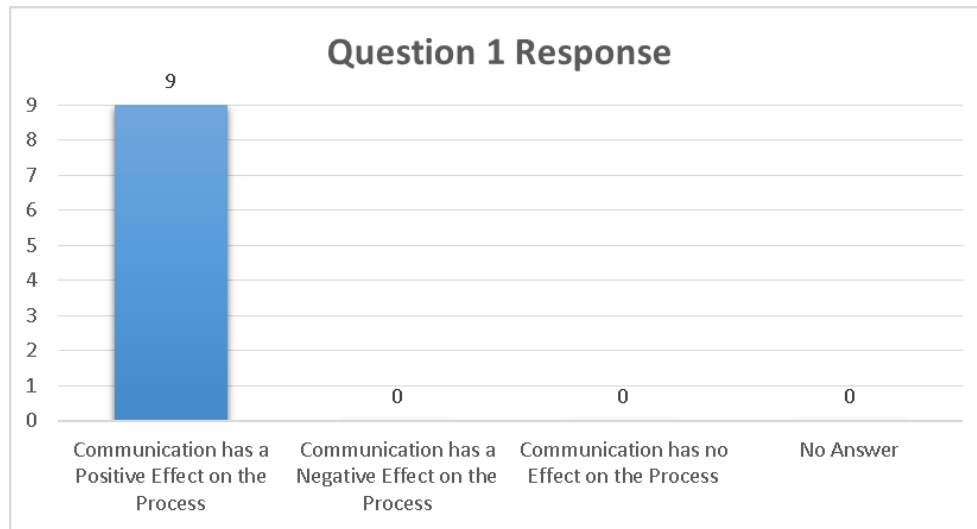
NOTE: The interview question for this response is, "How does communication between the contracting officer (KO) and the program manager (PM) affect the process of developing the acquisition requirements package, publishing the solicitation, and awarding a contract in a timely manner? Please provide examples."

In one case, the interviewee went as far as to say, "[they have] never seen a procurement work without high comms [communications], even with good communication some problems will still exist, but without it they are certain" (P. Mann, personal communication, May 14, 2015). According to our interviewees, these communications are accomplished best in one of two ways. The first is to have the KO tightly integrated with the PM team. This can manifest in several different ways with similar results. Whether it is the PM and KO literally sitting 15 feet from one another or as part of an Integrated Product Team, physical proximity matters. When physical proximity may not be present, the second is to have customers tightly aligned and coupled with goals and outcomes. This is accomplished best by assigning a team of contracting professionals to a requiring activity, which aligns their goals with that of the supported organization. Conversely, when contracting professionals are assigned to multiple and different requiring activities and moved from procurement to procurement, goal alignment and continuity may be difficult. This highlights the issue of contracting resource availability. Not only has there been a marked reduction in the number of contracting professionals available to perform this work, but there is also a significant

amount of knowledge has been lost due to an aging workforce that is not being replenished quickly enough.

Using the Schramm communication model (Schramm, The Process and Effects of Mass Communication, as cited in Certo, & Certo, 2006, p. 332) as a critical component supporting the TIPS pillars (Figure 25) to examine this common theme, it can be determined that the close physical proximity of the PM and KO will improve the quality of communication by shortening the signal path. As with any signal transmission, attenuation can occur over distance, making the most pure signal that which is closest to the source. The field of experience overlap is also increased by close physical proximity. The PM and KO working together daily will develop a similar knowledge set that is based not only on their backgrounds but also on their intimate knowledge of the current program. This makes the foundation for communication more solid. This similar knowledge set will also reduce problems introduced by the encoding/decoding process by building a common lexicon that is inherent when working in close proximity to one another.

Figure 25. Communication Model Overlaid with the TIPS Model

TIPS © - Yoder, 2013
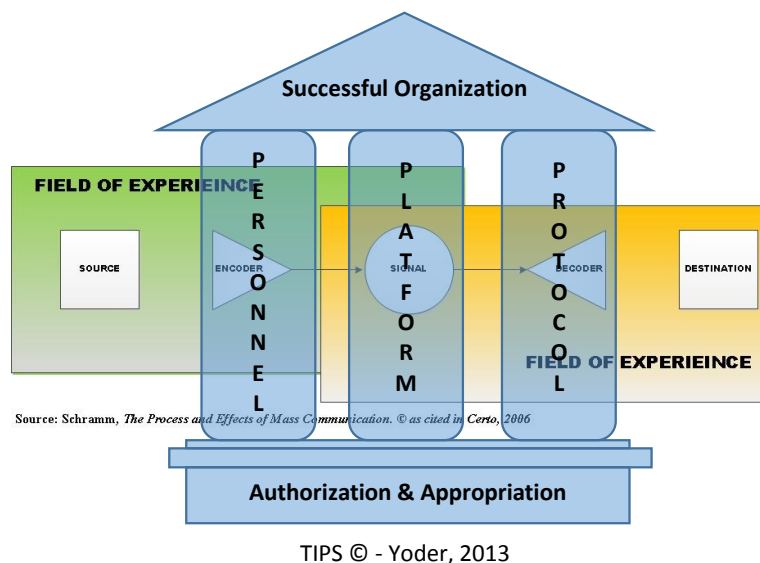
After Certo, S. C., & Certo, S. T. (2006). *Modern management*. Upper Saddle River, NJ: Prentice Hall. After Yoder, E. C. (2010). Phase zero operations for contingency and expeditionary contracting—Keys to fully integrating contracting into operational planning and execution. (Report No. NPS-CM-10-160). Retrieved from http://www.acquisitionresearch.net/files/FY2010/NPS-CM-10-160.pdf

The communication theme represents a key component of the personnel pillar of the Yoder TIPS model. Having the right personnel in the correct organizational structure is key to enabling communication and collaboration. When designing an acquisition organization, extra care should be taken to embed the contracting professionals within that organizational structure, if possible. As previously stated, if the organization is not structured to embed contracting personnel within the program office, the over-arching organization must be structured such that contracting personnel are dedicated to a program office or requiring activity. This helps to ensure continuity of operations and increases the pride of ownership within the contracting team making communications and collaboration more likely.

Effective communication and collaboration has been shown to produce amazing results for programs. For example, MRAP, 9 IDIQ contracts were put in place in under six months. These would sustain the government's authority to ultimately execute over $50 billion dollars while simultaneously limiting liability to a couple million dollars (P. Mann, personal communication, May 14, 2015).

2. Theme 2 - Performance

"The responsibility for delivering a suitable, survivable, and sustainable capability rest squarely with the program manager" (P. Mann, personal communication, May 14, 2015). The PM is chartered to ensure that the requirements are adequately defined and that the system built meets these requirements. It can be noted, however, that communication between the PM and KO will speed up the process and increase the quality of the acquisition products (examples are Performance Work Statement, Statement of Objectives, etc.). While the KO cannot change requirements, it is their responsibility to inform the PM in a timely manner of potential problems with the acquisition of the currently defined requirements.

When considering that the development of requirements for a system is the sole responsibility of the requiring activity, it is important to remember that these requirements must be translated into a contract by the acquisition team. For this reason, it is absolutely critical to the acquisition that the technical requirements and performance

specifications are accurately transcribed from the end user all the way into the contract. The following potential pitfalls with the communication process required here can be identified when examining the Schramm communication model (Schramm, The Process and Effects of Mass Communication, as cited in Certo, & Certo, 2006, p. 332). In the model, we see that there is an encoding and a decoding process that is supported by the respective party's field of experience. This translation process provides an opportunity for details or intent to be lost in translation, and it is for this very reason that requirements must be stated in measureable and unambiguous metrics.

Ensuring program performance requires an effective protocol, or collection of protocols, as identified in Yoder's TIPS model for successful organizations. This ensures that requirements are sufficiently translated and remain traceable back to the original user need. There are multiple methods used by the Systems Engineering discipline that are effective at translating user needs into procurable requirements and providing the traceability needed for successful contract execution. To name a few, quality function deployment (QFD) and house of quality (HOQ) are common. As part of a successful organization, a method should be selected early and well-defined within the requiring activity.

3.   Theme 3 - Contract Type

The contract type selected for an acquisition is critical to its success. The contract type is used to manage risk, incentivize contractor performance, and manage program cost growth. The interviewees had much to say about this topic, and it presents an opportunity for further research to be discussed in Chapter V. The consensus, again unanimous (Figure 26), was that the contract type does impact the program's performance.

Figure 26.   Interview Question 5 Responses
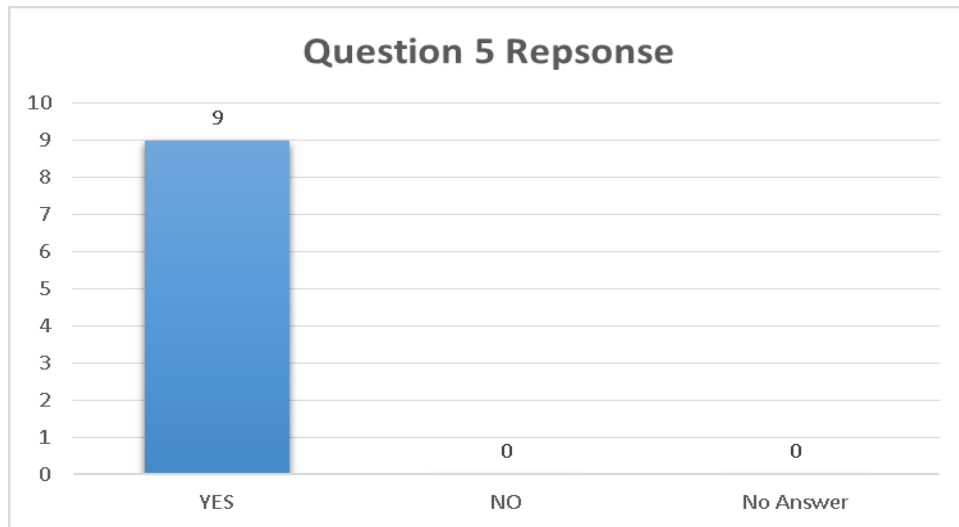
NOTE: The interview question for this response is, "Does contract type (fixed-priced, cost-reimbursement or time and materials Contracts) have an effect on a programs performance? What trends can be attributed to a higher number of program failures when using one contract type over another? Is the contract type in question selected unilaterally (PM or KO), bilaterally (PM and KO), or required by policy? Please provide examples."

When it comes to selecting the contract type, most interviewees felt that a bilateral consensus between the PM and KO was the best method for selection. Ultimately, the contract type is the responsibility of the KO, and it should be selected with consideration for what the "PM can execute" (J. Kaiser, personal communication, May 13, 2015). There are, however, numerous factors that impact or mandate the use of a particular contract type. First is the law. Often times for a particular type of acquisition, commercial services for example, the type of contract vehicles that are permitted is limited. Second, there are other stakeholders that have "hands on the wheel," (P. Mann, personal communication, May 14, 2015) though who these stakeholders are depends on the acquisition's visibility and size. Third, the reviewing authority can refuse approval and require the KO to change the contract type prior to approval. Finally, different contract types seem to fall in and out of favor over time. Currently, we are entering a period of favor for "incentive-based contracts" (OUSD[AT&L], 2015, ch. 2), and often times there is severe pressure to utilize the favored contract type. There are waivers available for these non-regulatory policies. They are, however, often approved through similar chains as the approvals for the contracts themselves and the "distance from

Washington seems to be inversely related to the likelihood of waiver approval" (T. Byrnes, personal communication, May 8, 2015).

In order to select the best contract type for the program, it is important to have bi-directional communication between the KO and the PM to exchange requirements, rules, and regulations limiting the available contract types for a particular acquisition. With a bi-directional channel of communication open, a consensus should be reached between the two parties with the KO having the ultimate decision per their warranted authority.

This key theme involves both pillars of Personnel and Protocol from Yoder's TIPS model. First, selecting and executing the correct contract type requires that the right people be in the right place. Second, as previously stated, one of the biggest factors effecting the ultimate selection of the contract type is often outside the program office. Either program headquarters or the reviewing agency will require a certain contract type removing the ability of the PM and KO to select what is bilaterally agreed upon as the best option for the program. Additionally, guidance documents that often are explicitly written without intent to be directive in nature are interpreted by senior leaders as mandatory. Often these best practices or recommendations are written into the performance objectives of acquisition professionals, essentially turning them into concrete requirements that the PM and KO must make work for all programs.

It is the conclusion of this research team that the contract type selected is critical to the success of program. For the proper contract type to be selected it is imperative that the PM and KO communicate and work together to decide what is legal and what will best meet the requirements of the program. Past this truth, however, a problem has been discovered that may be much more difficult to correct, and that is the problem of oversight influence. It is the job of the warranted KO to select and write the contract and make an attestation that it meets all legal requirements and represents the best value for the government. According to our interviews, however, there are often additional considerations when selecting the contract type. For example, as different contract types fall in and out of favor there is increased pressure to make that contract type work in all situations where not expressly prohibited by law. Additionally, service, command, and local policies are often written into the performance objectives of acquisition

professionals linking their career success to the adherence to direction that was often never intended to be concrete in nature. These policies, and even the FAR, are written to be permissive in nature, meaning that if something is not expressly prohibited it is allowable.

4. Theme 4 - Program Success/Failure

Programs rarely fail due to a single cause, and, therefore, it is difficult to say with any statistical confidence that poor or lack of communication has led to increased program failure rates. "It can be hypothesized however that at least some failures could have been prevented by leveraging better collaboration to more effectively manage contract performance" (COL H. Culclasure, personal communication, April 16, 2015). The same hypothesis could easily be expanded to include the ARP, RFP, source selection, and award processes. There are several anecdotal examples of failure contributed to by poor or lack of communication, including the ERP use of a FFP contract type (COL H. Culclasure, personal communication, April 16, 2015). See the PARCA section previously discussed and the "lack of communication and understanding of the level of effort required, [which] was a key element in the overrun experienced by Unit Level Logistics System-Aviation (Enhanced) (ULLS-AE)" (A. Ford, personal communications, April 21, 2015).

Communication is the bedrock of all functions that must take place within a program. While as noted previously, it would be an unlikely case for poor or lack of communication to be the sole cause of failure; effective communication is required to make the overall program successful. Recall that effective communication is defined as communication that relays the sender's message to the receiver without distortion or loss. In addition to effective communication, it must be an ongoing effort, encompassing all relevant aspects of the acquisition.

An organization, or program, as shown by Yoder's TIPS model, requires all three pillars (personnel, platforms, and protocols) to work together in unison to ensure success. Via our research, we propose that these pillars are held together internally with effective and continuous communication (Figure 25). Personnel without communication do not

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represent an organization; rather, it is a collection of individuals. Platforms without communication become a collection of independent components. Finally, protocols without communication become good ideas in the mind of one.

5. Theme 5 - ARP Collaboration

The percentage per annum of ARP's rejected by the KO varied drastically in our interviews (Figure 27). On the low end, responses indicated that only 1–2 percent (J. Kaiser, personal communications, May 13, 2015) per year were rejected, and on the high end the responses indicate that the figure is somewhere in excess of 90% (T. Byrnes, personal communication, May 8, 2015).

Figure 27.   Interview Question 6 Responses
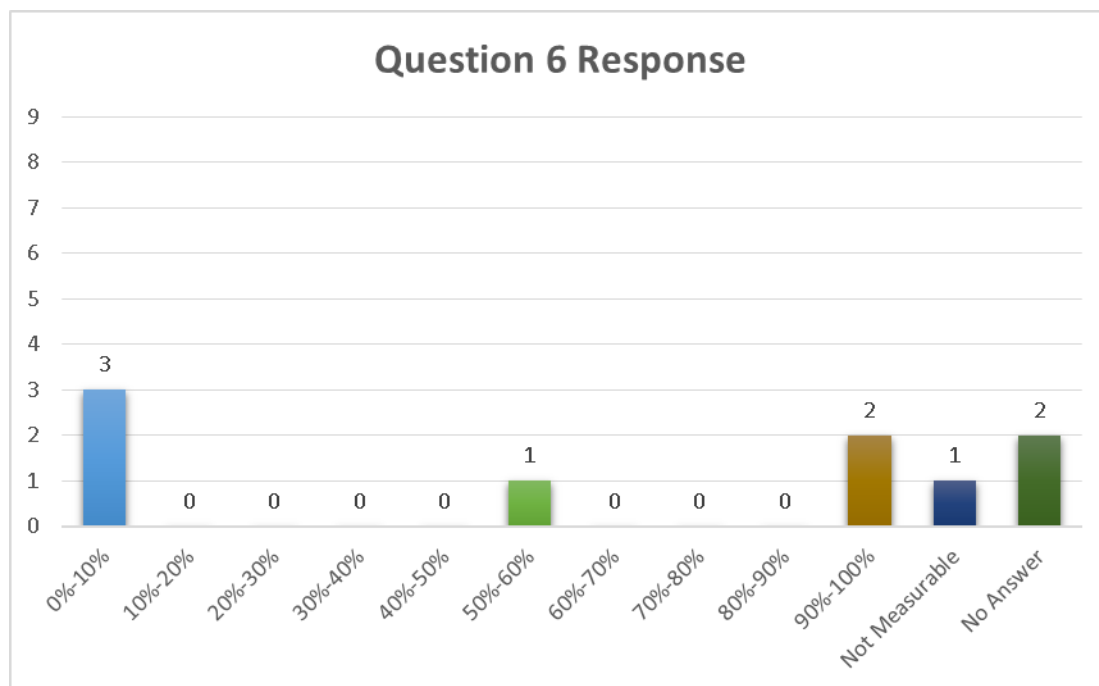
NOTE: The interview question for this response is, "What percentage per annum of acquisition requirements packages (ARP) were rejected by KOs due to unclear or unmeasurable requirements? Could this percentage be reduced with more or earlier contracting involvement?"

Upon closer inspection of the source of these figures, the seemingly disparate rates actually support the findings that effective communication is critical to success. Without actually qualifying our interview question with a variable to capture whether the

interviewee questioned is currently in a program that is experiencing effective communication or not, our data cannot be directly compared to one another. For example, one respondent stated that only 1–2 percent per year are rejected and 50–60% require some rework (J. Kaiser, personal communication, May 13, 2015). This response came from an individual in a contracting organization that is embedded with the PM shop or, in other words, is working under the many-to-one model as it relates to the ratio of contracting professionals to programs/projects. Another respondent stated that 90–95% per year are rejected which leads to significantly increased lead times for procurements (T. Byrnes, personal communication, May 8, 2015). This response came from an individual in an organization that is working under the one-to-many model, in which each contracting professional is assigned to multiple programs/projects, and the same individual may not always be working the same procurement.

This data highlights the potential problems when breakdowns in communications occur. Without the collaboration of the requiring activity and the contracting professionals, the difficulty of generating a representative, procurable set of requirements is increased exponentially. It is the job of the requiring activity to ensure that a correct and complete set of requirements is captured in the ARP. Jointly it is the responsibility of the contracting professionals to ensure that the requirements that are listed are unambiguous, verifiable, and testable. Creating this package jointly with communication and collaboration has been shown to reduce the time required to create the document, reduce rework required to gain approvals, and ultimately reduce overall cycle time for the acquisition.

The protocols supporting the Yoder TIPS model that is in place by the program office for how the ARP will be staffed is critical to the effective communication of the requiring activity and contracting professionals. In order to ensure success in this area, there must be consideration for the collaboration required to generate the ARP correctly and in a timely manner.

6. Theme 6 - Policy

The general consensus when inquiring about the effects of policy, law, and regulation on the performance of the Defense Acquisition System were mixed (Figure 28).

Figure 28.   Interview Question 7 Responses
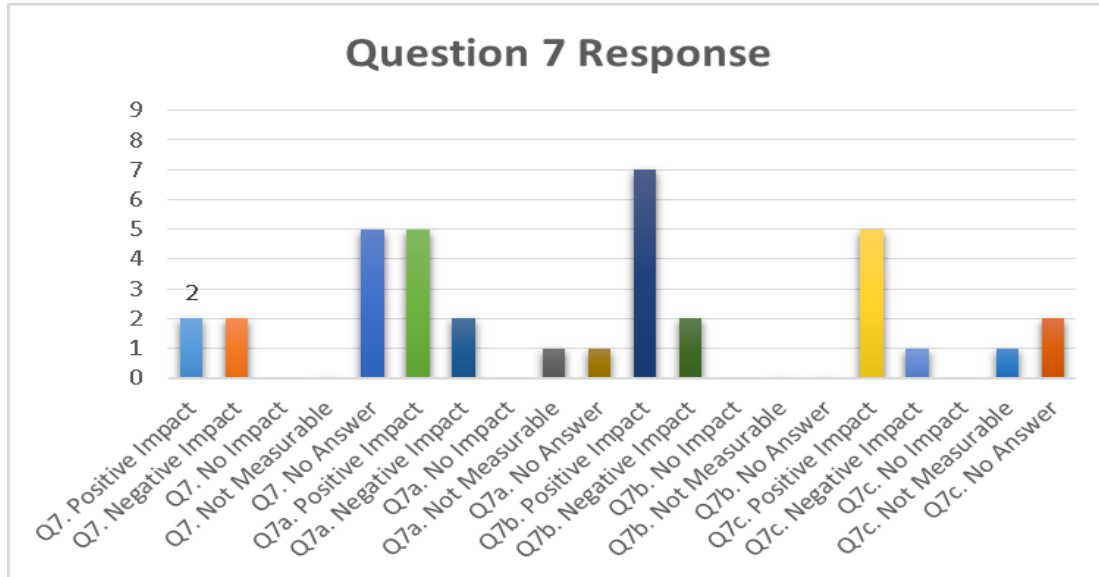
NOTE: The interview question for this response is, "When thinking of the Army Acquisition process, does current acquisition policy, law, and regulation have a positive or negative impact on Army acquisitions?" This question had three sub-questions. Please see Appendix for the complete list of questions.

Upon deeper inspection, however, a more homogenous view is revealed. When speaking about the laws and regulations, the FAR and DOD 5000, the responses in general were that they support the process, provide guidance and direction, and are helpful (J. Kaiser, personal communication, May 13, 2015; P. Mann, personal communication, May 14, 2015). This research discovered several qualifiers to this statement. First and foremost is the notion that the "regulations are permissive by nature and interpretation as such is critical" (P. Mann, personal communication, May 14, 2015). The lack of direction or intentional ambiguity in certain areas of the regulation often leads to disagreements between the KO and the approving agency (T. Byrnes, personal communication, May 8, 2015). It is in these instances where the KO must be given the

opportunity to exercise his or her warranted authority, and the more permissive but not prohibited options must be taken. The addition of service, branch, and local policy can, as often happens, make the total regulatory process extremely rigid. These additional policies require further time and manpower to address, which is often not adequately planned or resourced (T. Byrnes, personal communication, May 8, 2015). Finally, the addition of policy or required actions done in an effort to prevent a reoccurrence of a past failure must be handled with extreme caution as these policies can accumulate quickly making their navigation almost impossible.

The results of this research do not show any significant shortfalls in reference to communicating policies and procedures. Because of the legal implications, great care is taken in this area and significant resources are allocated to ensure that all applicable laws, regulations, policies, and procedures are followed.

This theme provides an example of how the protocols pillar can be taken too far. We know from Yoder's TIPS model that the correct protocols must be in place to ensure a successful organization. It is important to consider that this can also apply to having too many or improper protocols. One of the many issues with navigating the Defense Acquisition System today is not the primary Defense Acquisition Framework to include the DOD 5000 and the FAR but, rather, the hundreds of additional Service, Command, and local policies, along with appropriate case law, that make the system slow and traitorous to navigate.

7. Theme 7 - Process

"Decentralized contracting [KO apart from the PM] leads to a lack of synergy, lack of back and forth, [the] distance leads to packages being lost in a black hole" (J. Kaiser, personal communication, May 13, 2015). Multiple interviewees echoed the notion that separation of the contracting professionals from the program mangers is going to hurt the acquisition process. Currently, there is a move toward contracting "Centers of Excellence" that aims to centralize contracting actions for much of the Army (T. Byrnes, personal communication, May 8, 2015). According to the data collected in this paper, this will hurt the throughput times and performance of the acquisition system for those

affected by these changes. Additionally, a lack of "dashboards" (P. Mann, personal communication, May 14, 2015) or common Army "toolsets" (J. Kaiser, personal communication, May 13, 2015) that provide for better management and metric tracking hurt the ability of the Army to improve and streamline the acquisition contracting process.

As stated previously, the distance that communication must travel is directly proportional to the signal loss or risk that the original message or intent will be altered. All signals attenuate over distance, so the farther removed the requiring activity is from the contracting professionals the more difficult and error prone the communications process becomes. It is important to note that it is not the proposition of this research that physical distance alone will cause communications problems with the acquisition process, but rather it is what we will call *logical distance*. It is possible, thanks to modern technology, for a requiring activity and contracting service to be separated by a large physical distance yet remain highly engaged and collaborative. This type of environment is represented by dedicated contracting professionals assigned to specific requisitions with minimal intermediary communication channels and high levels of engagement by the contracting team. Conversely, it is also possible to have a requiring activity and contracting team located in the same physical building, but for reasons dealing with communications protocols, personnel assignments, sense of ownership, and others, a large logical distance can be present, meaning that effective communications become very difficult. Additionally, the use of technology for disseminating information is critical in the modern acquisition environment. The use of performance metrics, status reporting, dashboards, and more can all significantly improve the situational awareness of team members and management, enabling communications that are more relevant and, thus, a higher likelihood of project success.

The paradigm shift, moving contracting activities to Centers of Excellence, represents a change in protocol as defined in Yoder's TIPS model. Adequate consideration must be given to the effect this change will have on the performance of the organization as viewed from the requiring activities perspective. The physical and logical separation that this and similar contracting protocols will place into the system will

increase difficulty of effective communications between the KO and PM. Additionally, the lack of systems (Yoder TIPS-defined platforms) such as performance metrics dashboards, unified systems for information sharing, and execution in place across the entire DOD represents a large hole in the supporting structure for organizational success.

8.   Theme 8 - Training

This particular area of this research reveals what is perhaps the largest disparity in answers from the interviewees (Figure 29 and Figure 30). Several said the "training is available but requires discipline and time […] you get out what you put in" (P. Mann, personal communication, May 14, 2015); several others said that "training is not sufficient" (T. Byrnes, personal communication, May 8, 2015); and some respondents felt that "what is really needed is OJT [on the job training]" (J. Kaiser, personal communication, May 13, 2015). The majority responded that the training either does, or at least should, encourage collaboration and communication, and while it is clear that the PM and KO need to "stay in their own swim lanes" (C. Branscomb, personal communication, June 21, 2015) the training should be cross-functional to the extent enabling better collaboration between the PM and KO throughout the process. For example, learning the "jargon" (J. Kaiser, personal communication, May 13, 2015) and "building a common language and process" (K. Wojick, personal communication, April 10, 2015) are critical first steps to enabling a collaborative work effort.

Figure 29.   Interview Question 10 Responses
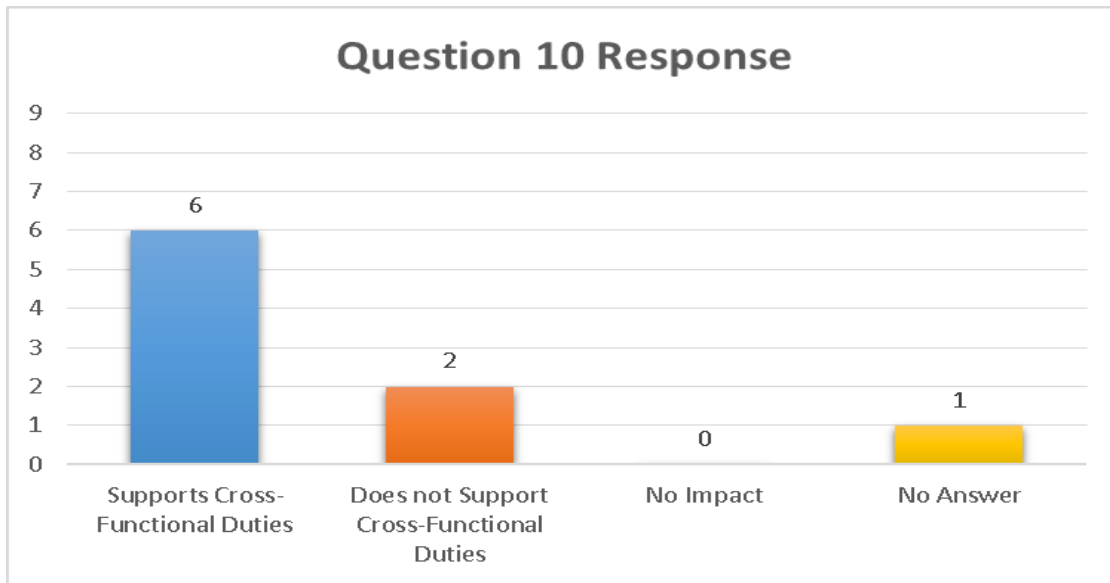
NOTE: The interview question for this response is, "Is there available training supporting the cross-functional duties between the PM and the KO?"

Figure 30.   Interview Question 11 Responses
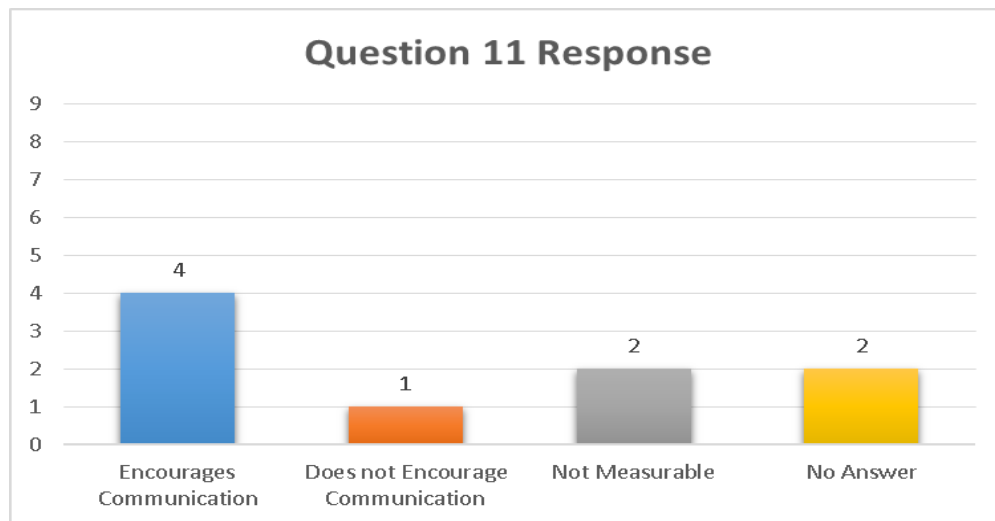
NOTE: The interview question for this response is, "How does the current training encourage communication and collaboration between the PM and the KO?"

The field of experience as described by the Schramm communication model (Schramm, The Process and Effects of Mass Communication, as cited in Certo, & Certo, 2006, p. 332) is the prime beneficiary of training, especially that which is cross-functional and encourages communication. While it is clear that each function (PM and KO) has very distinct and specific duties, knowledge of how the other operates and requirements specific to the other's field is invaluable in enabling collaborative work groups. Cross-functional training combined with OJT and developmental assignments must be designed to maximize the overlap that exists in the field of experience between the PMs and KOs.

Training is critical to produce the right people. As is described in Yoder's TIPS model, personnel is critical to ensure the success of an organization or, in our case, a program. The right training and experience is needed to ensure that personnel are being developed for these critical positions.

9. Theme Links

Figure 31 provides a graphical representation of the common themes extracted from the interview data. The graphic also depicts how the common themes are linked within the process of acquisition. The interaction amongst the themes can be described as: Policy, Process, and Training are required to support effective communication/collaboration between the PM and KO. Effective communication/collaboration between the PM and KO supports the successful outcome of two key products, the ARP and the contracting type (strategy). These two key products in turn drive the outcome of the last two themes, system performance and ultimately program success.

Figure 31.   Common Themes Extracted from Interview Data
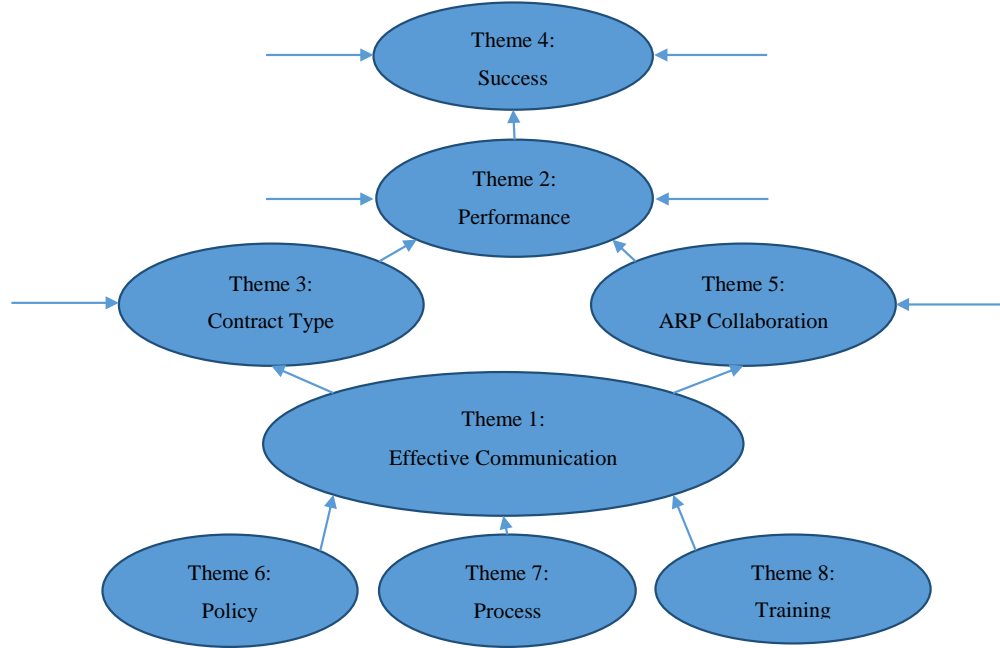
Figure 31 is *not* an all-encompassing formula for program success. As indicated by the unsourced inputs to the Success and Performance components, there are many other factors that can drive the outcome of these markers. Figure 31 is included to identify the common themes extracted from the interview data in this research and to provide flow and context for how they interact within the system as a whole.

E. RECOMMENDATIONS

Based on the themes identified in the previous section, the following are the recommendations resulting from this research that once implemented will improve the performance of the DAS. Performance improvements are made through improving the outputs of the contracting phase, which heavily impacts the overall program outcome. The contracting products that drive these outcomes are significantly impacted by the level of communication and collaboration between the PM and KO. Recommendations are numbered corresponding to the theme that they address.

1.   Recommendation 1

In order to reproduce the success enjoyed by the MRAP program across the DOD portfolio, this team recommends that, when possible, the contracting team be embedded within the requiring activity. If organic contracting capability is not feasible, it is imperative that the contracting resources be assigned to a requiring activity, maximizing stability and minimizing personnel changes.

2.   Recommendation 2

In order to produce quality requirements packages, the acquisition team must have effective communication supported by a good requirements definition protocol. To ensure better success in this area, we recommend that a requirements definition protocol be selected early via a collaborative approach with the acquisition team to include contracting professionals.

3.   Recommendation 3

It is the recommendation of this research team that acquisition professionals are empowered again. KOs must be given the ability to execute the full authority of the warrant that they are granted. This is not a recommendation to remove all oversight and checks and balances, but the system has become overly burdensome and restrictive such that the KOs are severely impacted in their ability to effectively execute the duties of their warrant. The solution for preventing excessive and gross error must be accountability and not legislation.

4.   Recommendation 4

While the risk of program failure can never be completely eliminated, increased communication frequency and effectiveness will reduce the risk. Therefore, this team recommends that personnel, platforms, and protocols are established with a focus on maximizing communication and collaboration within the elements.

5. Recommendation 5

It is the recommendation of this research group that the requiring activity has in place a protocol or set of protocols that outline how the requiring activity and contracting professionals will work collaboratively to generate the ARP. IPTs have been shown to be effective in this area but the scope of this recommendation is not so narrow as to say they are the only acceptable collaborative forum.

6. Recommendation 6A

One of the hallmarks of the regulatory system governing the operation of the Defense Acquisition System is a propensity to create a law or regulation whenever a misstep occurs in an attempt to prevent recurrence. While this step is sometimes necessary, this research team recommends migration to a system based on accountability where individuals and organizations are held responsible for their actions, as opposed to a micro-managed system in which errors are attempted to be regulated out of the process.

7. Recommendation 6B

An initiative to promulgate a shared understanding and freedom to interpret the regulations as permissive in nature will significantly improve the environment in which the PM and KO must collaborate.

8. Recommendation 7A

To effectively reduce the PM/KO signal path, the department must shift away from Contracting Centers of Excellence, or decentralized contracting from the program's perspective, back to an embedded and customer-aligned paradigm, placing the contracting professionals as close to the requirement source as possible.

9. Recommendation 7B

In an effort to improve the department's platforms that support the acquisition community, the development and deployment of a DAS-wide system for managing procurements, requirements, financials, and performance metrics should be initiated.

10. Recommendation 8

Based on the preceding analysis, this research team recommends that the training, OJT, and developmental assignments be evaluated to ensure that the content is both cross-functional and encourages communication and collaboration. Additionally, the availably and dissemination of the existence of these training options and opportunities should be maximized. Vehicles such as DAU provide a great option for establishing training and certification requirements for the acquisition workforce.

F. CONCLUSIONS

The statistical data presented in this chapter shows that the Army is making improvements in some metric areas with respect to defense acquisition (for example, schedule growth for development contracts); however, the Army is also getting worse in key areas (for example, cost and schedule growth for production contracts). According to the last report on the Performance of the Defense Acquisition System, the overall effectiveness rate was 88% and suitability rate was 72% over the measurement period of 1984–2013 (OUSD[AT&L], 2014, p. 16). This shows that we can and must do better. One of the common root causes highlighted by the PARCA office in their assessments both statutory and discretionary between 2010 and 2012 as published in the 2013 edition of the report on the performance of the Defense Acquisition System is contract performance. Specifically, over 56% of failures had one or more root causes linked to poor management performance to include the management of contract incentives (OUSD[AT&L], 2013, p. 34).

When evaluating the current performance of communication and collaboration of the PM and KO against the Schramm communication model (Schramm, The Process and Effects of Mass Communication, as cited in Certo, & Certo, 2006, p. 332), the following key points have emerged. First is the benefit of a reduced signal distance represented by what was previously described as a low-logical separation between the PM and KO personnel. This is best accomplished by embedding the contracting professionals within the requiring activity, and this serves well in reducing the number of encoding and decoding errors. Second, the process, which will also be covered under the TIPS (Yoder,

2010) review of protocols, used by the team to effectively translate capability gaps and user needs into requirements packages that are procurable and representative of the item needed is important. Finally, the notion of bi-directional communication is critical. Bi-directional communication as outlined by the Schramm communication model (Schramm, The Process and Effects of Mass Communication, as cited in Certo, & Certo, 2006, p. 332) is imperative for the refinement of the requirements package to ensure that it is satisfactory to both parties, as well as in the selection and negotiation of the best contract type for the acquisition.

Similarly, evaluating the current state of communications between the PM and KO against the Yoder TIPS model revels the following. First is personnel: Having the right people in place to ensure that the "logical" communication distance between the PM and KO is as short as possible requires that the proper training is available and being utilized. Additionally, with respect to organizational structure, it is critical to have the contracting professionals embedded or, at a minimum, customer-aligned with the requiring activity to ensure success. Second is the platforms: This is lacking in a consolidated system for requirements, funding, documentation, and metrics. A system that is available for the unified execution of the contracting system along with a dashboard for the situational awareness of decision-makers and key personnel is critical to the success of the requiring activity. Last is the protocols: This pillar is lacking both requirements definition protocols and proper operational oversight protocols to enable a successful organization. There must be a proper requirements definition protocol in place that outlines how the capability gap/user needs will be translated in a collaborative fashion into the relevant acquisition documents. Additionally, there is a significant protocol problem when considering the impact that contract authorization authorities and leadership can have on the selection and approval of the contracting type through the acquisition strategy or by other means. This often takes the shape of writing best practices into performance objectives or starting a lean project targeting a particular policy or process. There is no one-size-fits-all solution to the complex problem that is defense acquisition; thus, a single approach be required of all programs traversing the process should not be mandated.

The findings from tour research should come as no surprise; after all, communication and collaboration is mandated by current acquisition law and regulation. The current FAR outlines the communication processes in Chapter 7; the DOD 5000 Series covers communication and the creation of IPTs for the development of the acquisition strategy numerous times; and the DAG covers the process, including communication in depth throughout their Chapter 14.

It has been shown that problems with RFQs and ARPs can be caused by lack of communication between the two functional areas in question, and that contract execution problems does in more than 50% of failures analyzed by PARCA contribute to their demise (OUSD[AT&L], 2013, p. 34). Thus, it can be stated that while poor communication or collaboration is not a definitive indicator of a program destined for failure, it does cause significant problems within the system as we know it today. So how do we fix it? The recommendations here will be covered in more detail in the next chapter; however, as an overview, the contracting professionals must be adequately resourced for the amount of workload that they are given. This will allow all requiring activities to have contracting professionals either embedded or, at the very minimum, customer-aligned. These professionals (PM and KO) must be adequately cross-trained not to perform the duties of the other functional area but to share a field of experience sufficiently that effective communications will be enabled. A common information system (IS) that is used for everything from requirements tracking to contract creation and billing should be evaluated and deployed to maximize the benefits of the information age. Along similar lines, a performance metric measuring and reporting system should be deployed to maximize the information available to decision-makers. Finally, the system as a whole must become more accepting of a regulatory framework that is permissive in nature, meaning that laws, regulations, policies, and guidance should not be constantly overriding what is best for a program because in someone's eyes it is the best for the majority.

G.   SUMMARY

This chapter presented both the quantitative and qualitative data that collected in support of this research. The quantitative data presented showed that the DAS is not performing well in all areas. Through PARCA reports and a case study, the point was made that poor program performance can be in part linked to poor contract performance. The reduction of qualitative interview data to common themes was used to show that poor contract performance is linked to poor communication between the PM and KO. Recommendations were provided for each common theme identified and analysis provided for why they are needed. In the next chapter, these recommendations are presented in a consolidated format along with recommendations for further research.

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V. CONCLUSION AND RECOMMENDATIONS

This chapter provides an overview of the information and analysis provided in Chapters II through IV. To answer the thesis question of this research, the findings from the analysis performed in Chapter IV are linked back to the primary and secondary research questions. From these findings and answers to the research questions, we outline recommendations for corrective actions and for further research. Finally, a conclusion is presented outlining the importance of communication based on the models used in this research and linking it to the process between the PM and KO that is needed for successful acquisitions.

The findings of this research show that program performance is dependent upon contract execution and, as such, the communication and collaboration of the PM and KO is critical. There are currently statistically significant problems with the performance of the DAS, especially in the areas of Army procurement contracts' cost and schedule growth. According to the PARCA office, a majority of those programs with serious performance problems have a contributing factor of poor management including contracting incentives. The interview data collected shows that poor communication and collaboration has multiple effects on a program including the selection of contracting strategy and types. The failure to collaboratively select a contract type that properly incentivizes the contractor while simultaneously minimizing the risk to the government is a common problem found in poorly performing programs.

A. CHAPTER SUMMARY

To highlight key points and to reiterate the logic flow used to guide this research, this section provides an overview of Chapters I–IV.

1. Chapter I

Chapter I laid the foundation for the conduct of this research. It provided background into the roles and responsibilities of the PM and KO and historical perspective to build a common knowledge set amongst the readers. The case presents the

need for this research along with the benefits from implementing the results. The chapter describes an outline for the research methodology and narrates an overview of the research conducted. The research questions used to guide the process along with the organization of this paper conclude the chapter.

2.   Chapter II

Chapter II covered current laws, regulations, policies, and guidance on the operation of the DAS. To adequately address the issue of communications between the PM and KO, it is important to have a common basis of knowledge regarding the environment within which both functional areas must operate. To this end, a review of the FAR, DFARS, DOD 5000 Series, DAG, BBP, and PARCA was conducted to provide a comprehensive high-level view of the boundaries that must be navigated throughout the acquisition process. Key takeaways from this chapter include the sheer volume of regulatory guidance published creating a challenging environment for the operation of the DAS; the regulatory mandate for communication between the PM and KO, "…acquisition, capability needs, and financial communities, and operational users shall maintain continuous and effective communications…" (Department of Defense, 2003, p. 5); and the permissive nature of the environment, "…Government members of the Acquisition Team may assume if a specific strategy, practice, policy or procedure is in the best interests of the Government and is not addressed in the FAR, nor prohibited by law (statute or case law), Executive order or other regulation, that the strategy, practice, policy or procedure is a permissible exercise of authority" (Federal Acquisition Regulation, 2015, Subpart 1.102).

3.   Chapter III

Chapter III outlined the framework used to analyze and reduce the interview data collected in support of this research. The research team utilized two models to determine communication/collaboration problems between the PM and KO during the acquisition process. First, the Schramm communication model (Schramm, The Process and Effects of Mass Communication, as cited in Certo, & Certo, 2006, p. 332) defines the basic process for effective communications between two people or organizations. It covers key areas

such as the field of experience of the sender and receiver, the encoding and decoding process, and the signal itself. This provided a foundation for understanding basic communication techniques. Second, the Yoder Three Integrative Pillars of Success (TIPS) model describes the three critical elements (pillars) that must be present in a successful organization: personnel, platforms, and protocols. Third, the IPA process was covered as the tool utilized to both design the research method and extract common themes from the interview data. Finally, the chapter gives a description of the interview data summary process and graphics to provide a cohesive framework for the analysis performed in Chapter IV.

4. Chapter IV

Chapter IV presents the data sets and provides analysis for the research. The researchers conducted a statistical review of the performance of the DAS to provide a basis of need for this research. Then we performed a review of several reports from the office of PARCA to link critical failures in the acquisition process to poor management performance, including ineffective use of contracts. The chapter presented a current case study, highlighting the bottom line effects of poor communication and collaboration between a requiring activity and a contracting shop. Finally, the common themes extracted from the interview data using the IPA process were presented and analyzed against the Schramm communications (Schramm, The Process and Effects of Mass Communication, as cited in Certo, & Certo, 2006, p. 332) and TIPS models to determine areas for improvement. There was a preview of recommendations for potential improvement and identification of recommendations for further research.

B. CONCLUSIONS

1. Primary Research Question

In answering the primary research question, "To what degree does early and ongoing communication between the program manager and contracting officer, impact the success or failure of Army acquisition programs?" our research proved that early and continuous communication is critical to program success. When looking at the statistical, historical, and anecdotal data presented in Chapter IV, an additional discovery was made:

The contracting process is critical to overall program success. One hundred percent of the interviewees participating in this research echoed this sentiment and took a step further to state that the contract type selected is important. The selection of the proper contract type and effective execution of the contract is highly dependent of the effectiveness of communications between the PM and KO.

2. Secondary Research Questions

In answering the first secondary research question, "Are problems with RFPs and Contracts related to poor communication and collaboration between the KO and PM?" it is the conclusion of this research that, as stated by Mr. Mann, "even with good comms [communication] problems can still occur, but without it they are certain" (P. Mann, personal communication, May 14, 2015). Often times these problems are concentrated around the generation of the ARP and SOW that are then written into the RFPs and ultimately the contracts. Even though the ultimate content of the requirements is the sole responsibility of the PM, a collaborative process is necessary to make certain that both parties (PM& KO) agree on the ARP/SOW, making sure it is representative of the system needed and that the requirements are procurable.

In answering the second secondary research question, "Does current acquisition policy, law, training, and regulation impact success/failure rates of contract execution?" the findings of this research indicate that current acquisition policy, law, training, and regulation does impact the success/failure rates of contract execution. While policies "provide direction and purpose to execute the job" (J. Kaiser, personal communication, May 13, 2015) and are, "in general […] very positive" (P. Mann, personal communication, May 14, 2015), the fact that the law is permissive must remain at the forefront (Federal Acquisition Regulation, 2015, Subpart 1.102). When the overwhelming number of laws and regulations become supplemented with service, command, and local policies combined with dissimilar interpretations of the "permissiveness" of the law, the process becomes paralyzing.

C. FINDINGS

The top five common themes are presented here based on their impact on the performance of the DAS as determined by the findings of this research. From the overall set of themes identified in Section D of Chapter IV, we extracted this prioritized list. In order to improve the performance of the DAS, these key themes must be addressed based on the recommendations in Section D of this chapter.

1. Theme 5 - ARP Collaboration

This research found that acquisitions utilizing non-embedded or customer-aligned contracting professionals experienced a very high rate of ARP rejection. The ARP must be developed collaboratively with the PM and KO to ensure that accurate and traceable requirements are both captured and procurable. The Effective Communications finding will address this further. We identified this to be a protocol issue, where according to the TIPS model, the correct protocols must be in place for a successful organization.

2. Theme 3 - Contract Type

The interviewees for this research unanimously agreed that the contract type was critical for program success. While the final decision rests with the KO, it is in the best interest of the program to bilaterally decide on a contract type that will best serve the program's risk management and requirements needs. This theme uncovered a deeper problem of contract type selection approval. During our interviews, several cases were revealed where a legal contract type was bilaterally selected between the PM and KO only to be rejected by contracting's approving authority or higher headquarters. Additionally, there are often external pressures from headquarters and others attempting to influence the contract type depending on the visibility of the program. Finally, an environment of conformance exists, where often times PMs and KOs are pressured to use whatever contract type is currently in favor, to the extent that it even may become linked to the career progression of these individuals.

3.   Theme 1 - Effective Communication

Based on Schramm's model for successful communications (Schramm, The Process and Effects of Mass Communication, as cited in Certo, & Certo, 2006, p. 332), we identified the following key ideas. In order to ensure effective communications between the PM and KO, a short logical distance between the two entities is required. Recall from Chapter IV that logical distance is lengthened by effects such as disparate organizations, layers of bureaucracy between the PM and KO, and the ineffective use of technology (email, SharePoint, online collaboration tools, etc.). A short logical distance is critical to maximize the overlap in the field of experience between the sender and receiver and to reduce the distance that the signal must travel and become subject to attenuation. This research found that when contracting professionals are embedded in the program office, communication and collaboration activities were much more prevalent. If this is not possible, the contracting team must be customer-aligned, meaning that they are assigned to a single requiring activity. The Yoder TIPS model Personnel pillar supports this, where the right people are in the right place within the organization.

4.   Theme 6 - Policy

The laws and regulations, while "in general positive" (P. Mann, personal communication, May 14, 2015), can become asphyxiating when compounded with service, command, agency, and local policies. Combined with a common view that these laws are restrictive in nature, meaning that if something is expressly not allowed it is prohibited, the system becomes extremely slow and burdensome. There are two distinct areas for improvement: The first is to reduce the number of additional command, service, and local policies that are often created in response to an error under the illusion that a policy will prevent recurrence. Second is to effectively promulgate and encourage the permissive interpretation of the laws and regulations.

5.   Theme 7 - Process

The current lack of a unified system for the PM and KO to connect all functional areas, such as financial, logistics, requirements, contracting, security, etc., represents a shortcoming in the platform pillar as defined by the Yoder TIPS model. An attempt at the

Standard Procurement System (SPS) in the late 1990s became so expensive that it never took off (J. Kiser, personal communication, May 13, 2015). Offices that desire this capability are left to themselves to develop and maintain their own toolset to perform these functions. The lack of a collaboration-enabling technology such as the SPS hurts the flow of information both up the chain of command for reporting purposes and across organizations for increased communication capabilities.

D.   RECOMMENDATIONS

The following recommendations, tied to a top five themes by number, are the result of the analysis of the key findings from the interview data as compared against the Schramm communications (Schramm, The Process and Effects of Mass Communication, as cited in Certo, & Certo, 2006, p. 332) and Yoder TIPS models. The top five recommendations are presented in the same order as the themes they correspond to in the previous section. The themes and recommendations are ordered based on their effects on the performance of the DAS. Based on the published models used for analysis, remediation is necessary to close gaps in the current process.

1.   Recommendation 5

It is the recommendation of this research that beyond the regulatory requirement for collaboration on the acquisition strategy, that an internal protocol be established by all requiring activities defining how ARPs, SOWs, etc., will be developed collaboratively between the PM and KO.

2.   Recommendation 3

The recommendation provided by this research group to address this issue is to empower the KOs to use and be accountable for their warranted authority granted by the government. Additionally, an effort must be made to change the paradigm surrounding the regulations' restrictive nature.

3.   Recommendation 1

It is the recommendation of this research that whenever possible the program office or requiring activity has contracting personnel embedded within the organization and physically co-located with the PM. If this is not feasible, then the contracting personnel must be customer-aligned to the requiring activity by the overarching organization.

4.   Recommendation 6A

A system of authority and accountability must be used to give the PMs and KOs the freedom and resources they require to do the jobs asked of them. A measurement system that will hold them accountable for their errors and results must be implemented.

5.   Recommendation 6B

An effort must be made to educate the acquisition community of the permissive nature of the laws and regulations. Without the freedom to make decisions that is clearly defined in the FAR, the system becomes paralyzed.

6.   Recommendation 7A

The initiative to decentralize contracting by moving to "Contracting Centers of Excellence" must be reversed to facilitate recommendation number one. With decentralization, contracting of the communication, collaboration, and continuity that are proven by this research to be critical to the overall programs performance are made difficult if not impossible.

7.   Recommendation 7B

It is the recommendation of this research that an evaluation be completed on the development and deployment of a unified ERP-like system that will connect everyone in the acquisition field for the purposes of information sharing and workflow optimization.

### E.	FURTHER RESEARCH

The scope of the research covered herein has been limited to providing an overarching, high-level view of this problem as a part of the whole system. There are three areas identified in this research as showing potential benefit from further research.

#### 1.	Interviewee SME Availability

Because of the lack of statistical data tying poor program performance to problems with contracts and contract problems to communications issues between the PM and KO, in order to effectively answer this question qualitative interview data must be used. Interviewees were selected based on their background in program management or contracting; the total number of subject matter expert (SME) candidates that were available to the researchers for this project were limited. It should be noted that even with the small number of participants that were interviewed, nine in total, we did not see a large standard deviation in the responses that would be indicative of an unacceptably small sample size. To ensure the findings of this research are truly representative of the larger system as a whole, however, it would be prudent to repeat this research with a larger sample size.

#### 2.	Contract Type - Oversight

Perhaps the largest issue without a clear path forward to arise from this research is that of contract type selection oversight by either the contracting agencies headquarters or another entity. The ability of an outside, often uninvolved, entity to unilaterally (oversight) change an otherwise bilateral (PM and KO) and agreed upon contract type without any basis in law or regulation undermines the collaborative process that this research seeks to promote. This is not to suggest that all contracting actions should not undergo a formal review process to ensure that all applicable laws and regulations are followed; rather, as per FAR part 7, notwithstanding prohibitions by law, the contract type should be selected based on the best interests of the program as determined by the KO with collaborative input from the PM. Further research is needed to investigate how frequently this is occurring in the DAS and to determine the root cause of these changes.

3.   BBP Tenant

Finally, the recent release of BBP 3.0, a document that is based on the idea of continuous process improvement (CPI), focuses more than ever on the BBP tenants. It is the proposition of this research that while BBP is overall beneficial and provides best business practices and a monitoring process that helps improve the system as a whole, not all ideas are good for all acquisitions. As stated by Mr. Frank Kendall USD[AT&L] in his forward contained in the *2014 Annual Report on the DAS*, there is no one size fits all in acquisition. For example, the current shift to incentive-based contracts does not make sense in all cases. There seems to be significant pressure to implement all BBP focus areas as if they were codified in federal law. First, we recommended further research to determine the extent of the BBP-forced compliance phenomenon within the DAS. Second, we recommend an attempt to address a process to both leverage the CPI model that is BBP, along with its best business practice-like recommendations, while maintaining the freedom of the acquisition professionals to ultimately select the best options for their program. Finally, we recommend studying the possibility of adding a communications focus area to the next iteration of the BBP as improvement in this area will provide critical support to the overall goals of the initiative.

F.   SUMMARY

In closing, communication plays a critical role in every acquisition, especially in the contracting portion as has been investigated in this research. This research has shown, based on published performance models (Schramm communication; Yoder TIPS), the current shortfalls that exist within the operation of the DAS as it exists today with respect to PM and KO communications and collaboration. In light of the budgetary constraints of modern times in the defense industry, along with the duty to be good stewards of the taxpayers' dollar, every effort must be made to maximize the efficiency of the DAS and increase its relative output capacity. In order to accomplish this, the issue of communication must be addressed and taken seriously.

APPENDIX. INTERVIEW QUESTIONS

Interview questions
-Current success/failure rates of Army acquisitions.

1. How does communication between the contracting officer (KO) and the program manager (PM) affect the process of developing the acquisition requirements package, publishing the solicitation, and awarding a contract in a timely manner? Please provide examples.

2. How does communication between the PM and KO factor in to ensuring the success of Army acquisitions (Success being a suitable, survivable, and sustainable capability being delivered on schedule and within budget)?

3. Where has communication, or lack thereof, between the PM and KO been a contributing factor to the failure of an Army acquisition (failure being an APB breach, cost overrun, schedule slip)? Please provide specific examples.

4. According to a March 2011 GAO report titled *Trends in Nunn-McCurdy cost breaches for major defense acquisition programs*, since 1997 there have been 74 breaches involving 47 programs with 18 of those programs having breached more than one time. How have failures been a direct result of the contracting process as they relate to communication between the KO and the PM? Please provide specific examples.

-Issues with RFPs/contracts effecting program performance.

5. Does contract type (fixed-priced, cost-reimbursement or time and materials Contracts) have an effect on a programs performance? What trends can be attributed to a higher number of program failures when using one contract type over another? Is the contract type in question selected unilaterally (PM or KO), bilaterally (PM and KO), or required by policy? Please provide examples.

6. What percentage per annum of acquisition requirements packages (ARP) were rejected by KOs due to unclear or unmeasurable requirements? Could this percentage be reduced with more or earlier contracting involvement?

-Policy, law, and regulation

7. When thinking of the Army acquisition process, does current acquisition policy, law, and regulation have a positive or negative impact on Army acquisitions?

   a. How does application (adherence) of the DOD 5000 Series impact the success/failure rates of Army acquisitions as it relates to contracting collaboration/involvement?

   b. How does application (adherence) of the FAR/DFARS series impact the success/failure rates of Army acquisitions as it relates to contracting collaboration/involvement?

   c. How does the application (adherence) to the Federal Acquisition Reform Act, Federal Acquisition Streamlining Act, and Service Acquisition Reform Act regulations impact the success/failure rates of Army acquisitions as it relates to contracting collaboration/involvement?

8. How will the Better Buying Power initiative impact Army acquisitions as they relate to contracting collaboration/involvement?

-Process

9. Are there any trends in which tools, processes, and procedures used in Army acquisitions impact the success or failure rates of contracts and programs? For those positively affected, was there a noticed increase in communication and collaboration between the PM and KO throughout the program?

10. Is there available training supporting the cross-functional duties between the PM and the KO?

11. How does the current training encourage communication and collaboration between the PM and the KO?

12. How has training impacted the success rate of acquisition programs? Please give examples.

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