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**JOINT APPLIED PROJECT**

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**LPTA VERSUS TRADEOFF: HOW  
PROCUREMENT METHODS CAN  
IMPACT CONTRACT  
PERFORMANCE**

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**June 2015**

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**LPTA VERSUS TRADEOFF: HOW PROCUREMENT METHODS CAN  
IMPACT CONTRACT PERFORMANCE**

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Submitted in partial fulfillment of the requirements for the degree of

**MASTER OF SCIENCE IN CONTRACT MANAGEMENT**

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# **LPTA VERSUS TRADEOFF: HOW PROCUREMENT METHODS CAN IMPACT CONTRACT PERFORMANCE**

## **ABSTRACT**

Early in the procurement planning process, the acquisition team determines the method of proposal evaluations that will be used during source selections. The most frequently used methods are lowest price technically acceptable (LPTA) and tradeoff. LPTA is typically used when requirements are well-defined and participants in the evaluation have sufficient knowledge to confidently choose a technically acceptable proposal. Conversely, tradeoff-based evaluations are employed when the evaluators are not as certain about the requirements and utilize non-cost factors to negotiate with offerors. For requiring offices, LPTA can be an easier method if the requirements are well-defined and commercially available, but they may find performance and deliverables after award to be acceptable rather than outstanding. Those using a tradeoff method may find that, by clearly defining expectations during negotiations, offerors are better able to deliver on the expectations of the acquisition team and the customer. The goal of this project is to determine whether or not there is a relationship in U.S. Army contracts between the method of procurement (LPTA versus tradeoff source selection methods) and the quality of the contract outcomes, to be measured by evaluation of Contract Performance Assessment Reports System reports.

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## LIST OF ACRONYMS AND ABBREVIATIONS

ACC	Army Contracting Command
ACC-NCR	Army Contracting Command, National Capital Region
ACC-NJ	Army Contracting Command, New Jersey
ACC-RI	Army Contracting Command, Rock Island
ANCOVA	Analysis of the Covariance
ASA (ALT)	Assistance Secretary of the Army for Acquisition, Logistics, and Technology
BBP	Better Buying Power
BPA	Blanket Purchase Agreement
CAR	Contract Action Report
COR	Contracting Officer's Representative
COTS	Commercial Off-the-Shelf
CPARS	Contractor Performance Assessment Reporting System
DAU	Defense Acquisition University
DOD	Department of Defense
DV	Dependent Variable
EDA	Electronic Document Access
ERP	Enterprise Resource Planning
EVM	Earned Value Management
FAR	Federal Acquisition Regulation
FPDS-NG	Federal Procurement Data System-Next Generation
FY	Fiscal Year
GAO	Government Accountability Office
GSA	General Services Administration

IDIQ	Independent Delivery Indefinite Quantity
IGCE	Independent Government Cost Estimate
IT	Information Technology
IV	Independent Variable
LPTA	Lowest Price Technically Acceptable
MANCOVA	Multivariate Analysis of the Covariance
MPC	Most Probable Cost
NAICS	North American Industry Classification System
NDAA	National Defense Authorization Act
OFPP	Office of Federal Procurement Policy
PALT	Procurement Administrative Lead Time
PCF	Paperless Contract File
PEO EIS	Program Executive Office Enterprise Information Systems
PPIRS	Past Performance Information Retrieval System
PSC	Product Service Code
RFP	Request for Proposal
SAT	Simplified Acquisition Threshold
SSEB	Source Selection Evaluation Board
SSIP	Superior Supplier Incentive Program
USD (AT&L)	Undersecretary of Defense for Acquisition, Technology & Logistics
VCE	Virtual Contracting Enterprise



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## I. INTRODUCTION

“Price is what you pay; value is what you get.” —Warren Buffett

The Federal Acquisition Regulation (FAR) established that members of a federal acquisition team are responsible for utilizing “personal initiative and sound business judgment in providing the best value product or service to meet the customer’s needs” (FAR, 2014, Part 1.102[d]). What constitutes “best value” is also defined by the FAR in Part 2 as “the expected outcome of an acquisition that, in the government’s estimation, provides the greatest overall benefit in response to the requirement” (FAR, 2014, Part 2.101). What goes without definition in the FAR is a clear and precise means for acquiring best value for the requiring party.

The current Department of Defense (DOD) acquisition environment is strained under the pressure of budget restrictions, limited resources, and increasing bureaucracy. The result is an overworked and undersupplied workforce that is still trying to understand how to efficiently and effectively garner best value for the government. Policy and procedure have dominated the acquisition cycle in efforts to produce contracts that deliver acceptable performance with timely procurement administrative lead times (PALT); yet, every year, the Government Accountability Office (GAO) finds continual evidence of underperforming contracts and increasing PALT. In this research we explore how best value is theoretically accomplished using contracting, how this impacts the current state of the DOD contracting workforce, and how the DOD is measuring the outcomes of completed contracts. The purpose of this study is to measure if the use of lowest price technically acceptable (LPTA) or tradeoff methods impact the quality of contractor performance on DOD contracts in one faction of the United States (U.S.) Army.

## **A. PROBLEM STATEMENT**

Industry and government have differing views regarding the quality of LPTA in evaluation of competitive acquisitions. The government views LPTA as a means of utilizing limited resources and spending only the necessary taxpayer dollars. “Contractors complain that low-price/technically acceptable source selection results in inferior performance or quality because contracts are awarded to the most cut-rate bidders” (Cox, 2015, para. 5). Industry is showing a general complaint that LPTA results in lower-quality delivery on contracts, and tradeoff is the better means for government and industry to work together.

## **B. PURPOSE**

This study aims to define the relationship between the best value continuum (LPTA and tradeoff methodologies) and the outcome of competitively awarded contracts. By having a better understanding of these methods and the outcomes of the contracts they impact, acquisition teams can make more informed decisions regarding which methodology to employ for future source selections. The defense budget appears to only be shrinking in the foreseeable future; government teams could benefit from verifying if LPTA, which is touted as saving the government money in the source selection process, actually results in acceptable contract outcomes or if tradeoff gives the government the best value.

This study aims to investigate whether or not the type of methodology for obtaining best value procurement has a measurable impact on the documented performance or outcome deliverables of that contract. Given the limitations and gradually shrinking defense budgets of late, this study’s results could benefit future acquisition teams that will decide which methodology to employ for a source selection.

### **C. RESEARCH OBJECTIVES AND QUESTIONS**

The objective of this research is to address if the source selection methodology (either LPTA or tradeoff) has an effect on the outcome of the contract (quality of contractor performance) measured in the Contractor Performance Assessment Reporting System (CPARS). The following research questions are used to guide this endeavor:

1. Does the utilization of LPTA or tradeoff impact the outcome of competitively awarded contracts?
2. Are acquisition teams making knowledgeable decisions regarding which best value methodology is most appropriate for their source selection?

### **D. METHODOLOGY**

The scope of this data gathering was limited to contracts awarded for programs under the Army Program Executive Office Enterprise Information Systems (PEO EIS) that exceeded the simplified acquisition threshold (SAT), currently set at \$150,000 (FAR, 2014, Part 2.101). Contracts must have been competitively awarded, and utilized either LPTA or tradeoff methodologies to determine award. The contracts must have been closed out as of the beginning of calendar year 2015, so that final CPARS reports could be obtained. Contract files must contain pre-award documentation, source selection plans, contract award documents, and CPARS reports, at a minimum, to be utilized for this study.

The first effort to gather an appropriate list of contracts for PEO EIS was via a query from the Federal Procurement Data System-Next Generation (FPDS-NG), for contracts that were awarded via competitive procurement for PEO EIS for \$150,000 or more, for which entries have been made into CPARS or other post-award performance evaluation. From that list, the contracts were found in Electronic Document Access (EDA), the online document repository for awarded contracts. Electronic documents were acquired from the databases at the participating Army Contracting Command (ACC)-Rock Island (ACC-RI) office at Rock Island Arsenal in Illinois, and the ACC-New Jersey (ACC-NJ) office. The contract files were also requested from the requiring program offices for the contracts, to include documents such as the Acquisition Plans/Acquisition Strategies, Source Selection Plans, Sections L (instructions, conditions, and notices to

offerors or respondents) and M (evaluation factors for award) of the contracts, Pre-and-Post Negotiation Memorandums, and other pre-award documentation. A memorandum from the current Program Executive Office for the Army PEO Enterprise Information Systems was provided to participating parties, confirming his approval and the non-attributional nature of this study.

## **E. BENEFITS AND LIMITATIONS**

The DOD is striving to demonstrate good business judgment and move toward smart execution of funds—to hold more power in defense buying. The latest publication in the series of Better Buying Power was released on April 9, 2015. Within this release of Better Buying Power 3.0 from the Undersecretary of Defense for Acquisition, Technology & Logistics (USD (AT&L)) Frank Kendall, under the “Incentivize Innovation in Industry and Government” (Kendall, 2015c, p. 2) initiative, there is a goal to “provide clear ‘best value’ definitions to industry” (Kendall, 2015c, p. 18). This guidance is working to reform the DOD to put best value at the forefront of acquisition concerns. While results from these reforms will not be seen for years to come, the efforts being put forth are indicative of a massive priority shift for DOD procurement. Understanding how best value contracting decisions impact the outcomes of the overall contract would be beneficial to future acquisition teams seeking efficient means of achieving best value.

The results from the last BBP 2.0 included a best value process manual that is scheduled to be added to the official Source Selection Guide, which will hopefully result in reduced fear of utilizing tradeoff methods and negotiations for appropriate procurements. With clearer indication for the outcomes of a contract, there is a chance for be reduced risk of contract waste, fraud and abuse, and bigger potential for achieving best value for the government.

While the goal of this research is to define the relationship between elements of the best value continuum and the outcomes of competitively awarded contracts, there are limitations to the contract data being considered. This study is only considering Army contracts, for the PEO EIS (which is discussed in Chapter III), from select Army

contracting commands. This limitation leaves a large amount of data not collected nor considered for this study. The specific contract data reviewed is limited to contracts that exceed the SAT, were performed between 2001 and 2014 (completely) and also have complete and accessible CPARS reports. This limitation leaves contracts with period of performance dates prior to 2001, contracts below the SAT or contracts with informal past performance information not gathered or analyzed.

## **F. SUMMARY**

As Warren Buffett stated in his 2008 Berkshire Hathaway, Inc. Annual Report and Letter to the Shareholders, “Price is what you pay; value is what you get.” Best value is clearly defined by the FAR, as are the categories on the best value Continuum: LPTA and tradeoff. What remains to be measured is whether LPTA or tradeoff will result in different levels of value for the government. Buffett continues in his letter by saying, “Whether we’re talking about socks or stocks, I like buying quality merchandise when it is marked down” (Buffett, 2008, p. 5). The same mantra can be applied to government acquisition in that acquisition teams must be stewards of the taxpayer dollar and aim to receive the best value for the dollar being spent. The aim of this study is to determine if one method is better than the other in endeavoring to be conscientious wardens of the American dollar.

This chapter discussed the background information, the problem statement, the purpose of this research, the methodology, and the benefits and limitations of this study. The next chapter contains the literature review for the basic concepts and issues relevant to this project, including source selection methodologies, the modern acquisition workforce, how government is working to reform best value contracting, as well as criticisms from industry regarding best value contracting. The importance of past performance information is discussed, and its impact on source selection evaluation boards.

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## **II. LITERATURE REVIEW**

The purpose of this chapter is to highlight key information that academia has already established to be true or of utmost important to the field of best value contracting. It begins with a review of the source selection methodologies utilized in best value contracting, LPTA and tradeoff, and the factors that indicate proper utilization of each methodology. Additionally, this chapter provides a discussion on the modern acquisition workforce and its level of comfort with utilizing best value procurements, and the need for acquisition education. This chapter explores the DOD's efforts to reform best value contracting, as well as industry's criticisms of DOD contract management processes. Finally the chapter will conclude with a discussion on the importance of past performance information.

### **A. SOURCE SELECTION PREPARATION**

The contract management process is composed of six basic phases: procurement planning, solicitation planning, solicitation, source selection, contract administration, and contract closeout. When an acquisition team forms and begins the contract management process, the team follows the standard six phases in order, beginning with procurement planning. The team will determine what is being procured, the details of the procurement, and "which business needs can be best met by procuring products or services outside the organization" (Rendon & Garrett, 2005, p. 5). Upon entering the solicitation planning phase, the team begins "the process of preparing the documents needed for source selection" (p. 5) and starts to make crucial decisions regarding how the evaluation will commence during the source selection phase. The team will need to determine not only the evaluation factors but also the relative importance of those evaluation factors. The team will then determine whether to move forward with the LPTA or tradeoff methodologies, depending on a variety of factors pertaining to the acquisition. The source selection methodology will be identified in section M of the contract that is released with the Request for Proposal (RFP) to industry during the solicitation phase.

Section 15 of the FAR, Contracting by Negotiation, discusses source selection procedures and how to determine the evaluation factors pertinent to a particular acquisition. Specifically, section 15.101 outlines the suitable situations for both the tradeoff and LPTA source selection processes. The purpose of section 15.101 is to assist agencies in obtaining best value by identifying the varying methods that can be utilized to that end.

This project focuses primarily on the decisions made before and during the source selection phase, guided by section 15, and how those decisions impact the contract outcomes. Before moving forward into the source selection phase, the acquisition team must determine if the acquisition should be evaluated using the LPTA or tradeoff source selection methodologies. In order to make that decision, the team must be familiar with the methodologies and how to determine if an acquisition is appropriate for either.

## **B. THE BEST VALUE CONTINUUM**

Outlined in FAR Part 15.101, “best value” refers to the continuum for proposal evaluation on which there are two general types of source selection methods: tradeoff and LPTA. To find the appropriate place on this continuum for an acquisition, multiple factors and their relative importance must be defined, to include the cost or price, the level of requirements definition, the level of risk, and how dominant the roles of non-cost factors will be played out in the evaluation. A 2010 GAO report revealed that the DOD chose a best value process for approximately “95% of its new, competitively awarded contracts on which it had obligated \$25M or more in fiscal year 2009” (GAO, 2010, p. 7). The remaining 5% were completed using Sealed Bidding, which is a competitive process in which award is made to a bidder whose bid conforms to the invitation for bid and is most advantageous to the government, considering only price and price-related factors included in the solicitation (GAO, 2010, p. 7). Therefore the DOD is extensively utilizing best value source selection methodologies found on the best value continuum.

The best value continuum is a spectrum that is based on the importance of price and non-cost factors, relative to price; as the importance of price decreases, the tradeoff process is more strongly implemented. LPTA and tradeoff reside at different positions on

the continuum, based on the varying importance of non-cost factors. If the sum of non-cost factors is equal to or more important than price, then tradeoff process is in play, while LPTA is utilized when the price is more important than all other non-cost factors combined (GAO, 2014b, p. 4). The best value continuum is defined clearly at FAR 15.101,

An agency can obtain best value in negotiated acquisitions by using any one or a combination of source selection approaches. In different types of acquisitions, the relative importance of cost or price may vary. For example, in acquisitions where the requirement is clearly definable and the risk of unsuccessful contract performance is minimal, cost or price may play a dominant role in source selection. The less definitive the requirement, the more development work required, or the greater the performance risk, the more technical or past performance considerations may play a dominant role in source selection. (FAR, 2014, Part 15.101)

The Best Value Continuum, seen in Figure 1, is a spectrum with points located based on the importance of price and non-cost factors:

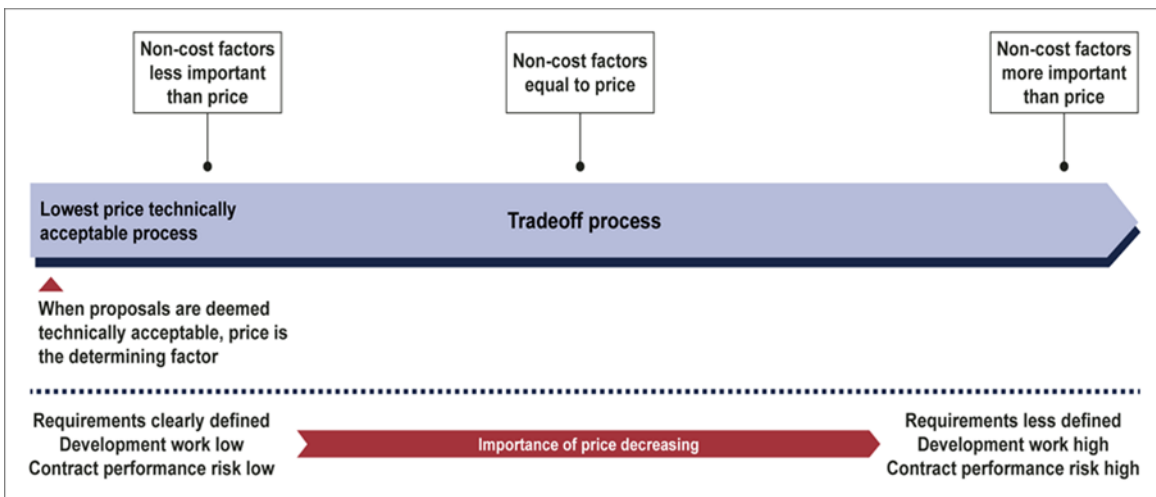


Figure 1. Source Selection Processes on the Best Value Continuum (from GAO, 2014b)

According to the design of the best value continuum, as the importance of price decreases the non-cost factors becoming increasingly more important, thereby indicating the appropriate environment for a tradeoff procurement. However, as the procurement's

importance of cost grows and outweighs the importance of non-cost factors, LPTA becomes the more appropriate choice for the procurement.

## **1. Lowest Price Technically Acceptable**

LPTA is a best value source selection method utilized when “the best value is expected to result from selection of the technically acceptable proposal with the lowest evaluated price” (FAR, 2014, Part 15.101-2). Requirements are typically well defined, the technical requirements are clear and there is no need for tradeoffs.

Fewer resources (time, money, and people) are necessary to perform a LPTA evaluation. Relatively inexperienced acquisition personnel can perform the evaluation. Under a LPTA requirement, contractual expectations and technical requirements are not easy to misunderstand, and therefore it is easy to determine if a proposal is technically acceptable. “LPTA should be used in situations where DOD would not realize any value from a proposal exceeding its minimum technical or performance requirements and that another process should be used when standards or performance and quality are subjective” (GAO, 2014b, p. 6). LPTA is frequently used for purchase of commercial off-the-shelf (COTS) products and services. If there is no additional benefit from paying more, then the lowest price technically acceptable method is best.

## **2. Tradeoff**

Tradeoff is a best value source selection evaluation method utilized when “it may be in the best interest of the Government to consider award to other than the lowest priced offeror or other than the highest technically rated offeror” (FAR, 2014, Part 15.101-1). Requirements are typically not as well defined, the work is experimental or the government is looking for the contractor to be innovative in its solutions. The solicitation for a tradeoff acquisition “shall state whether all evaluation factors other than cost or price, when combined, are significantly more important than, approximately equal to, or significantly less important than cost or price” (FAR, 2014, Part 15.101-1[b], [2]).

Non-cost factors are evaluation factors that are not related in any direct way to the cost of a contract. Examples include past performance, evaluation of the technical

capability, small business participation, and delivery schedule. Non-cost factors open the door for discussions between the government and the offerors, especially in negotiations, making for better understanding between all parties of the requirements, the level of expectations, incentives, and other pertinent elements of a successful business relationship. According to GAO Report 11-8, the most utilized evaluation factors under tradeoff were found to be Past Performance, Technical Evaluation, Timing of Delivery (where delivery of a final product or service was crucial to the contract's success), Reliability of performance in hazard zones, and Innovation. Non-cost factors used most often were Past Performance and Technical Capability (GAO, 2010, p. 13).

Under tradeoff, there is need for better communication between government and contractor regarding requirements. Better discussion surrounding clarity of requirements and chances for incentivizing for quality contract performance and outcomes are key to a successful tradeoff. Tradeoff can be particularly rewarding for requirements that are not as clear, the work is relatively new, or the government is looking for innovative approaches from industry. Kendall identifies in *Better Buying Power 3.0* that “whenever the Warfighter is willing to pay more for above threshold requirements or performance standards and may benefit from an innovative and technologically superior solution to meet their mission needs, a tradeoff source selection process between cost or price and non-cost factors is optimal” (Kendall, 2015c, p. 2). The situations that afford the greatest chance for a successful tradeoff are clear, but too often overlooked in the rush to make award or the ever-increasing pressure of budgetary constraints. Tradeoff source selection requires more time, money and people than a LPTA source selection. The tradeoff methodology can be a wonderful means of achieving innovative solutions that lead to technological advances for the DOD, if the acquisition teams are dedicated to the chance of achieving a quality tradeoff discussion. In order to achieve the desired results from discussions regarding non-cost factors, the acquisition team must understand how to properly utilize non-cost factors in the hopes of obtaining best value for the government.

### **C. SIGNIFICANCE OF NON-COST FACTORS AND PROPER UTILIZATION**

The easier way to determine savings and a “better deal” is when the price can be compared between two like items. When dealing with non-cost factors, that simplicity is lost and the acquisition team must determine the importance of factors that do not have an objective dollar value, and furthermore, determine the weight of those non-cost factors in relation to the dollar value. Thoroughly identifying the importance of those factors, as well as understanding the reliability of that data, can pay off handsomely throughout the evaluation process.

Evaluation of service contracts requires a different level of quality review—unlike a product contract that delivers an end item of supply, service contracts require constant surveillance and monitoring in order to keep minor problems from escalating beyond control and ultimately resulting in loss of quality. Past performance is one of the most utilized non-cost factors for evaluation, which can call into question the reliability of that past performance information. The GAO reported in the 09-374 report that past performance information was reluctantly relied upon by officials “due, in part, to their skepticism about the reliability of the information and difficulty assessing relevance to specific acquisitions” (GAO, 2009, p. 2). If government was not properly and consistently reporting on the performance of the contractors, then how could future source selection boards benefit from the knowledge gleaned from that performance? Only by standardizing and regulating how contractor past performance is reported can that data be relied upon to provide value during a source selection.

Converting non-cost factors to a dollar value is a concept discussed by Kendall, as we will explore later in this paper. By monetizing performance metrics, there is increased customer involvement in understanding requirement pricing, thereby giving the customer an insight into how the evaluators will make their decision. By knowing how much the customer is willing to pay, based on the value of the increased performance, a stronger justification can be made for the decisions based on non-cost factors, to potentially reduce the chance for successful protests. Further, as industry is better aware of how decisions are made regarding non-cost factors and what is most important to the

government, the quality of proposals could increase as well as reduced costs for the contractor as time is better spent on proposal development.

Risk is a non-cost factor that may not be typically seriously considered for contracts not in a contingency-type environment. When there is concern that a contractor will need to perform on time and in a dangerous area, risk is on the forefront of everyone's mind. Further from the front burner is the concept of cost risk, which is "meant to be a measure of the degree of difference between an offeror's proposed cost and the government's developed, most probable cost" (Graham, 2007, p. 32). As proposals are received and the gap between the government's expectations and the contractor's proposal are measured, cost risk can be identified and considered as a non-cost factor during discussions. The unreliability of a government estimate, however, increases the risk that the contract will not be fairly priced in accordance with the contract requirements. As non-cost factors are understood and utilized effectively, tradeoff is a less terrifying process than its reputation touts.

As the importance of non-cost factors increases and becomes of equal to or more important than the cost factor, the source selection process to obtain best value for the government becomes a tradeoff process. In order to understand the importance of non-cost factors, the acquisition team must understand the degree to which requirements are defined, the limitations of budget, the degree to which the government is willing to flex on each factor—multiple important issues need to be discussed by the acquisition team, including expectations for contractor proposals. The Better Buying Power (BBP) initiative was initially released by the USD, Dr. Ashton Carter, in 2010 (at that time, the USD (AT&L)). BBP identifies seven major areas that USD (AT&L) is pursuing to "enhance and incentivize efficiency" (Carter, 2010, p. 3), thereby inviting industry to work together with government in the tradeoff process. Government should be making strides towards better understanding where to accommodate "paying more (up to some amount) than the minimum price bid in return for a product that provides more than the minimum needed performance" (GAO, 2014b, p. 6). Acquisition teams may or may not be dedicating ample time to discussing the importance of the factors being evaluated in making the source selection decision, or are not thoroughly analyzing the customer's

needs over the wants. If innovation is needed, for example, then price may not be the most important factor. These discussions and concerns are difficult to see to fruition when the issue of funding is looming overhead.

Policymakers often insist that the best way to define “best value” is in monetary terms. The customer and the acquisition team need to firmly measure the extent to which more money earns more performance, and the limit to where dollars provide a return on investment. While the requiring party is the one benefitting from the final contract performance, the source selection authority is the party making the decision to award to the offeror, and has to justify that decision. Kendall discussed in a recent *Defense AT&L Magazine* article, “Getting ‘Best Value’ for the Warfighter and the Taxpayer,” the protest fear that overcomes acquisition teams, and the resulting reliance on choosing the low-cost offer purely because it is easy to defend: “The likely bias for an acquisition official making the source selection is to take the lowest-price offer; it’s much easier to defend than the subjective judgment that the higher-cost offeror was worth the difference in price” (Kendall, 2015b, p. 2). There are benefits to monetizing performance metrics, including increased customer involvement in understanding requirement pricing (“it forces our customers—the operators who set requirements—to consider how much they are willing to pay for higher performance” [p. 2]) and inviting industry to be intimately aware of the importance of clear pricing:

We want industry to be in a position to make informed judgments about what level of performance to offer. The easiest way to accomplish this is to tell industry exactly, in dollars and cents, what higher levels of performance are worth to us....Value or worth to the buyer has nothing to do with cost; it is only about what we would be willing to pay for something. (Kendall, 2015b, pp. 2–3)

Beyond the open communication benefit with the customer and with industry, there is benefit in reduced protests, since factors previously non-monetized no longer invite criticism on basis of subjectivity. “Avoiding successful protests is about setting down the rules for source selection, following them religiously, documenting the decisions we make so we can explain them if challenged, and maintaining the process integrity” (Kendall, 2015b, p. 2). The training for source selection teams prior to



performing evaluations only revolves around the ethical issues of fairness. The pressure to maintain strict ethical conduct and avoid potential for protest may inadvertently lead acquisition teams to take an “easier” path and therefore only utilize the LPTA method, even if the requirements are not appropriate for that method or the potential for garnering better value lie in utilizing the tradeoff method.

The differences in using LPTA or tradeoff again lie in the solidity of the requirements and the degree of flexibility between those requirements and price. “Sometimes LPTA makes sense but it doesn’t make sense if we are willing, as we usually are, to pay a little more for a much better product” (Kendall, 2015b, p. 3). If all parties understand what the government is looking to buy, and the elements on which they are willing to be flexible and pay more, there is greater likelihood that the finalized contract will be most appropriate and be of best value to the government even if the price is slightly higher. Understanding the factors involved and whether there is a necessity for tradeoff is most important, as “LPTA is appropriate when we have well-defined standards of performance and we do not place any value on, and are therefore unwilling to pay for, higher performance” (p. 3). If there is potential for significant performance benefit by paying just a little more, most acquisition professionals with good business judgment would agree that the taxpayer and customer are amenable to that tradeoff.

The DOD is clearly making significant efforts to improve upon best value contracting. Even with these increased efforts to properly remind the acquisition community of the proper utilization of both best value methods, however, use of LPTA is on the rise as of recent.

#### **D. INCREASING USE OF LPTA**

Year after year, the DOD is stricken with mandates to reduce costs and reduce funding for programs, which leave those programs to make do with less funding for a mission that is equal to or greater than the year before. The changing technological landscape and changing missions needs leave acquisition professionals with few options but to further employ use of LPTA. “DOD officials acknowledged several challenges in using the best value tradeoff process such as the difficulties in developing meaningful

evaluation factors, the additional time investment needed to conduct best value procurements, and the business judgment required of acquisition staff when compared to other acquisition approaches” (GAO, 2010, p. 21). There is therefore a belief amongst DOD officials that LPTA acquisitions require fewer resources to implement, while tradeoff typically requires more time to evaluate factors, weigh significance of non-cost factors, and engage in meaningful negotiations—time and resources which the government cannot afford for multiple simultaneous procurements.

LPTA has been gradually increasing, used at nearly the same rate as tradeoff, suggesting that the simplified method is becoming more accessible for teams that are seeking efficient evaluations to reach award to vendors faster with fewer complex elements. “In making tradeoff decisions, GAO found that DOD selected a lower priced proposal nearly as often as it selected a higher technically rated, but more costly proposal” (GAO, 2010, p. 2). Kendall defines in his recent memorandum, *Appropriate Use of Lowest Priced Technically Acceptable Source Selection Process and Associated Contract Type*, that LPTA is “the most appropriate source selection process to apply only when there are well-defined requirements, the risk of unsuccessful contract performance is minimal, price is a significant factor in the source selection, and there is neither value, need, nor willingness to pay for higher performance” (Kendall, 2015a, p. 1). Complex, poorly-defined requirements where the DOD is seeking innovative solutions therefore does not meet the requirements for use of LPTA. With increasing pressure to award contracts quickly and efficiently, however, LPTA would understandably be utilized more frequently than a time-consuming negotiation method, and can be tempting to use always, even if the procurement is not appropriate for that source selection method.

The capability and competence of the modern acquisition workforce is essential to developing successful contracts. The acquisition team, comprising contracting and non-contracting personnel, is charged with selecting the most appropriate source selection methodology in order to gain best value for the government. With this known responsibility, how certain can we be that any given acquisition team is capable of selecting the most appropriate methodology?

**E. CURRENT ACQUISITION PERSONNEL: EXPERIENCE, KNOWLEDGE, AND COMFORT WITH BEST VALUE PROCUREMENTS**

The DOD in 2011 “was put on the verge of a retirement-driven talent drain in this workforce after 11 consecutive years of downsizing” (GAO, 2012, p. 2). Following the massive reduction of the workforce and its assets, the U.S. found itself engaging in multiple wars worldwide and a technological boom that required excessive growth and purchasing in order to remain a leader in worldwide defense.

An underlying issue of the acquisition workforce is the lack of confidence in executing complex contracting actions. The DOD reacted to the downsizing of personnel in the 1990s by increasing its acquisition workforce positions from 133,102 in fiscal year (FY)09 to 151,355 in FY13, just in the contracting career field (GAO, 2014b, p.17). This massive hiring of new contracting personnel could pay dividends in the future, but the current landscape shows a general discomfort with executing complex contracting actions, as there has not been enough time (nor resources available) to get these unseasoned contracting personnel up to speed.

LPTA is typically a more comfortable process, since it takes less intimate knowledge of a product or service requirement and rather relies more heavily on the cost evaluation. A general discomfort with intimate knowledge of a requirement, in addition to limited time and resources to work on a single procurement when hundreds of other actions are standing by, leads acquisition teams to utilize LPTA over tradeoff.

Diversity is not the issue in the workforce, but rather a wide gap in the levels of experience in each group; while a majority of the workforce is currently near or eligible for retirement, the remaining personnel do not have the on-the-job experience necessary to facilitate complex procurements confidently, which has resulted in an increase of LPTA procurements for their simplicity as well as a number of best value procurements being overall incorrectly utilized.

According to GAO report 14-584, “Several contracting and program officials said that their commands gave more attention to whether LPTA is an alternative option in light of declining budgets and efficiency initiatives” (GAO, 2014b, p. 1). GAO found that

for contracts valuing \$25M or more there is an increased use of LPTA between 2009 and 2013 (increase by 10%) and a decrease in use of tradeoff (decrease by 11%) (p. 9). Several agencies, including the Army, Navy and Air Force (p. 13) cite the Better Buying Power initiative in the use of LPTA as fewer personnel resources are required for a LPTA evaluation than a tradeoff, and even less-experienced acquisition personnel can perform a LPTA evaluation—a solid example of “doing more without more” (p. 5). DOD officials believe that LPTA requires less manpower to review complex non-cost evaluation factors, less time to review proposals, less time to make award. In an environment where there is less of everything—time, money and manpower—and an increasingly larger mission with needs to be met, the DOD has invested less in training its workforce to handle challenging acquisitions and rather to employ LPTA whenever possible. “DOD predominantly used best value processes in FY13, but increased its use of LPTA for higher dollar contracts since FY09” (GAO, 2014b, p. 9) for obligations of \$25M or more, indicating that even though best value is still the main goal, acquisition personnel are more often choosing the road more easily traveled. Even though the DOD budget is being reduced year after year, the mission remains the same; therefore, to do “more without more” there is a greater need for intelligent business decisions and strong negotiating skills to get bigger returns on the American taxpayer dollar.

Quality of education of the acquisition workforce has taken a back seat, given the rush to get contracts awarded combined with the influx of new, unseasoned acquisition personnel. The range of educational courses offered by the Defense Acquisition University (DAU) for source selection are mandatory for contracting personnel, but offer only what the classroom can—theoretical application. According to officials from the Assistance Secretary for the Army for Acquisition, Logistics & Technology (ASA (ALT)), “on-the-job training provides important exposure for less experienced acquisition staff to the source selection decision making processes” (GAO, 2014b, p. 21). So while contracting personnel may show they are qualified on paper, defense officials still attest that the best training is on-the-job training, for which the seasoned contracting personnel have little time in which to engage. More value needs to be placed on the importance of diverse education if the goal of best value is to be achieved.

## **F. NECESSITY FOR ACQUISITION EDUCATION**

The tradeoff process is not necessarily flawed, but most would agree that the education of those using the process is lacking, therefore resulting in inappropriate practice of the process. GAO reported in the 11-8 Report, *Enhanced Training Could Strengthen DODs Best Value Tradeoff Decisions*,

DOD officials also noted that the complexity of the tradeoff process increases the risk of bid protests...for example, GAO found that 15 of the 88 contracts awarded using a best value tradeoff process reviewed were protested to GAO, resulting in 4 cases in which DOD determined that it failed to adhere to the solicitations' requirements. (GAO, 2010, p. 1)

Protests are undesirable for acquisition personnel as contracts (and thus the entire project) cannot move forward and focus must be shifted to defending source selection decisions. The acquisition teams attempting to utilize best value are either misunderstanding the stipulations necessary to utilize best value, or are finding late in the acquisition that their evaluation methodology was chosen incorrectly. Lack of forward planning and careful prioritization of requirements can lead to the need to change section M after offers have been received, which can lead to protest.

The need for education amongst the acquisition workforce is apparent, but the method of delivering that education is debatable. Some consider on-the-job training to be one of the most essential means of gathering sound source selection decision-making skills, but that process takes years and the valuable time of seasoned professionals. The most frequently employed option for defense acquisition education is from DAU. There are five core DAU courses regarding source selection evaluations:

- CLC 007—Contract Source Selection
- CON 121—Contract Planning
- CON 200—Business Decisions for Contracting
- CON 280—Source Selection and Administration of Service Contracts
- CON 334—Advanced Contingency Contracting Officer's Course  
(GAO, 2014b, p. 19–20)

It should be noted that while these courses are required for contracting personnel, the acquisition team is not comprised entirely of contracting personnel. Other acquisition personnel, such as program managers, technical managers, financial managers, are not

necessarily required to take these courses. What training is provided to other functional areas of the acquisition workforce working on source selection boards and making high-level contracting decisions? The potential lack of training for non-contracting personnel could be cause for concern.

Each course contains curriculum that specifically benefits a source selection team. These courses provide quality information from seasoned acquisition professionals and build a foundation for acquisition knowledge. While DAU training is essential to build a baseline for acquisition education, on-the-job training supplements and fills in gaps with real-world experience. The increased workload of acquisition professionals and bureaucracy of requirements for the acquisition process leads to an overworked, undereducated staff that must make award with limited resources. In essence, the problem is not the quality of the education, but rather the limited time allotted for acquisition professionals to break away from their jobs for in-residence course time. Just as rare is the time for seasoned professionals to impart knowledge on the newer workforce.

Beyond the established need for education, the challenging environment in which defense acquisition professionals must operate adds immeasurable stress to the procurement process. Best value proves to be helpful in unstable environments, such as war zones where past performance and technical capability are factors of greater importance, and for construction projects where safety and schedule requirements are paramount. LPTA, however, is being used more frequently for purchase of standard commercial products, and are proven to require fewer resources to meet award timelines. To mandate that one method must be used over another invites a myriad of examples that prove the opposite. Defense professionals must become seasoned in the rules of acquisition in order to navigate in challenging environments. The tradeoff process has been determined to be “far more time-consuming than other approaches,” “administratively burdensome,” and due to the extensive time of the acquisition process, it is “challenging to keep the same acquisition team together for an entire procurement” (GAO, 2010, p. 18). Contracting Officers are also nervous about the increased risk of a bid protest due to the complexity of the tradeoff process, which creates an environment of caution and wariness for trying new contracting approaches.

There is a thirst for standardization in the tradeoff process, and further, a desire for knowledgeable personnel who can provide sound business judgment. Acquisition professionals find that “developing non-cost factors that meaningfully discriminate between offers is a challenging part of the tradeoff process” (GAO, 2010, p. 17). Therefore, just getting the evaluation factors defined is strenuous for an inexperienced workforce. Furthermore, “the absence of meaningful non-cost discriminators can result in offerors receiving equal scores on the factors that were identified as being significantly more important than price” (p. 17). So if the tradeoff process was selected because the non-cost factors were deemed more important than price, but then those non-cost factors were not meaningful, then the resulting acquisition method is not only inappropriate for LPTA but also poorly designed for an appropriate tradeoff. If the acquisition team was entering an acquisition well-equipped with knowledge of the requirement, sound business judgment, and a wealth of experience and confidence in performing a source selection, there is greater chance for a successful contract and beneficial outcomes.

In order to give a contract the chance to be successful, the acquisition team must be prepared and confident in their knowledge of contracting. For an organization to foster an appreciation for education and expertise in best value contracting, there must be an environmental shift to put best value contracting on the forefront of policymaking decisions and DOD priorities. The DOD is making efforts to provide guidance to best utilization of best value contracting methods, but the impact of these measures will take time to evaluate.

## **G. GOVERNMENT EFFORTS TO REFORM BEST VALUE**

In April 2015, the third installment of the *Better Buying Power* series was released. Within the release of version 3.0, under the “Incentivize Innovation in Industry and Government” initiative (Kendall, 2015c, p. 2), there is a goal to “provide clear and objective ‘best value’ definitions to industry” (p. 18). This general guidance states:

This BBP 3.0 initiative builds on the work started in BBP 2.0 to provide industry with information on the value, in monetary terms, of higher levels of performance than minimally acceptable or threshold levels. Without this information, the default position will be to bid to the lowest

acceptable level of performance. With this information, industry will know what the competitive effect of offering higher performance will be and can bid accordingly. (Kendall, 2015c, p. 18)

Government is clearly working towards revitalizing the implementation of quality best value practices, although industry may not be aware of these strides until evidence of improvement is visible from active acquisition teams. Kendall followed up with a memo in May 2015 titled the *Appropriate Use of LPTA Source Selection Process and Associated Contract Type*, which not only anticipates a shift from use of Firm Fixed Price or Time & Materials to a Cost Plus Fixed Fee Level of Effort contract type, but more importantly emphasizes that the DOD is not utilizing LPTA in its “limited place in the source selection ‘best value’ continuum” (Kendall, 2015a, p. 1). Kendall identifies how DOD has been inappropriately utilizing LPTA for acquisitions too complex or with less-defined requirements that would benefit from an innovative contractor solution, and as a result “can miss an opportunity to secure an innovative, cost-effective solution to meet Warfighter needs to help maintain our technological advantage” (p. 1–2). Industry has responded already to this memorandum with favor, as LPTA has historically denied industry the chance to propose an inventive solution for somewhat murkier requirements. Bob Lohfeld responded to this memorandum in an April 2015 *Washington Technology* article stating that for technical service and solution procurements, “increased performance generally provides additional value to the government, and the government should strive to achieve an innovative, cost-effective solution to meet mission needs and maintain our technology advantage” (Lohfeld, 2015, para. 5). DOD and industry therefore agree that unless acquisition teams strive harder to properly utilize LPTA where appropriate and tradeoff where innovation is key, the U.S. will gradually lose the technological edge in worldwide defense. If DOD seeks to gain the best value for the Soldier where it counts, proper requirements development and best value method employment are critical steps in achieving that chance for technological superiority.

Surmounting the hurdles that divide government and industry is a challenge that can be approached by identifying industry’s perceptions and criticisms of the government procurement process. While the DOD is making strides to reform the best value contracting methodology, there are skeptical audiences that would suggest other ways to



reform parts of the process. The next section will discuss a sample of industry criticisms of government procurement and solicitation planning, and the source selection evaluation phase.

## **H. INDUSTRY CRITICISMS OF SOURCE SELECTION PRACTICES**

Industry and government often have conflicting priorities that overtake the discussions and goals of the mission. While government is responsible for being good stewards of the taxpayer dollars and the best interests of the public, industry is responsible for the concerns of their stakeholders, which often includes profit. Conflicting priorities often result in burden on the contracting process, but can also reveal inherent issues with the system that, if addressed, can facilitate the contracting process into obtaining best value and benefit for industry and government alike.

### **1. Procurement Planning Phase**

The two sides of the fence on which industry and government reside are filled with differing priorities that result in hearty proposal evaluations when both are willing to discuss. Cox in his article “Finding a Bargain for Government Buyers Shouldn’t Be a Crime” from *Government Executive* magazine argues this point citing that while industry complains that use of LPTA takes a bite out of costs (in terms of proposal development and aiming to underbid to stay competitive)—when in reality it mostly just takes a bite out of industry profits—that “bite” is nothing compared to the overall budget cuts happening in DOD (Cox, 2015). While in a generous world the government would work harder to reward the contractor with higher profits, or industry would relinquish profits in the name of the taxpayer dollar, the reality is that neither party is willing to financially give away the farm, resulting in a contentious debate over costs. Contracting Officers work hard to establish fair and reasonable pricing from offerors to ensure that all parties are experiencing a fair business relationship, but the perception amongst industry remains skeptical of the government’s practices.

Cox goes on to make the classic argument that if industry and government worked together to develop accurately written requirements documents, then industry could propose accordingly and the government would get what it asks for (Cox, 2015).

However, when requirements are poorly defined and LPTA is utilized, the resulting proposals do not necessarily hit the “technically acceptable” mark for what the government desires. As a result, either protests ensue or the government moves forward and receives inadequate performance with no room to recoup expenses.

Another widely accepted opinion Cox demonstrates is that industry insists that tradeoff is more beneficial to the government, but that insistence is really a performance in which industry tells the government what to buy (Cox, 2015). Using this reasoning, the government is not incentivized to correct poorly defined requirements, and instead uses industry to develop the requirements *and* deliver the requirements—at a premium. While all can agree that there must be a meeting of the minds in order for both sides of the fence to speak the same language and reach consensus on contract performance requirements, the contentious nature of the cost-saving priorities on both sides is a challenging obstacle to overcome.

In a 2014 *National Defense Magazine* article, Stew Magnuson refers to a conference where the president of a satellite company stated that government “is exchanging new applications and value added services for lower prices” (Magnuson, 2014, para. 3). The president goes on to say that “you may have written the best proposal of your life...but it will never be read by the government because of that LPTA requirements...it is a shame because there is no room for innovation when you do that” (Magnuson, 2014, para. 6). Magnuson quotes in his article a president of a satellite communications company as saying “the lowest bid gets its proposal evaluated to see if it meets the technical requirements...if it does, none of the others are considered or even read” (Magnuson, 2014, para. 6). Any knowledgeable contracting officer would refute that accusation and insist that all proposals are reviewed; but this does not reduce that stigma among industry if time after time the lowest bidder is found to be the winner. This increased tension between government and industry, as well as an increasing fear of protest amongst acquisition professionals, is contributing to higher walls being constructed between the two entities. An early mitigation for this tension is to invite industry to discussion regarding the requirements development to get them involved earlier in requirements discussions.

There is a very clear need for stronger industry involvement in requirements development and market research. This is a beneficial step not in the sense that industry is writing the requirements on which they would bid, but government would get a better idea for what is most important in their acquisition if they discuss the requirement openly with industry prior to release of the final RFP. The acquisition team should be performing thorough market research to have insight regarding the capabilities of industry and concentration of certain skills and practices, before determining if there is even room for innovation in an acquisition. If requirements are well-developed and cost estimates are firm and display all aspects of potential costs, then reviewing and evaluating proposals should be relatively simple, as all data involved is reliable.

In the late 1980s and early 1990s, when government was in the throes of reducing costs and downsizing bureaucracy and personnel, best value may not have been implemented properly by source selection teams, thereby resulting in a negative view of tradeoff practices in industry. In a hearing before the Subcommittee on Legislation and National Security of the Committee on Government Operations in May 1993, Stephanie Biddle, President of the Computer & Communications Industry Association (CCIA), stated in response to the recently approved Federal Acquisition Improvement Act of 1993:

Industry's greatest concern with best value is not that we don't think the government ought to get it; we think that the problem is the very loose evaluation criteria that characterize these acquisitions and that may, in fact, produce an award that is not based on any meaningful competition. The evaluation criteria in best value procurements usually do not tell vendors critical information regarding the relative importance that the agency places on price and technical factors. A typical best value procurement solicitation may say little more than technical considerations are more important than cost. But the agency does not give any indication regarding the extent to which technical considerations will outweigh price. Put into terms that you and I can understand, it is like saying, "I don't know if I want to buy a Cadillac that is comfortable or I want to buy a little less expensive car that gets good gas mileage." You have to have some idea what you want to buy before you spend hundreds of millions of dollars. (Biddle, 1993, p. 121)

This scathing review of government performance provides a concise snapshot of how industry viewed government's grasp on requirements development and its shoddy application towards tradeoff. Biddle is emphasizing with the Cadillac example that even if the Cadillac's requirements are well-defined, if there are no properly described evaluation factors from which industry can understand where government's priorities lie, then only half of the necessary information is present. As with Cox's previously reviewed accusation that government relies too heavily on industry's ability to write requirements, Biddle confirms that even if the requirements are well written for that Cadillac, the evaluation factors must coincide with the government's priorities for those requirements to come to fruition with a capable Contractor. Given the strides that DAU courses, defined policies and better understanding of how to develop and implement evaluation factors for source selections (due to the Federal Acquisition Reform Act of 1993) have made, this rift has been addressed if not somewhat closed. While industry and government may still disagree on the requirements themselves, there are paths forward to opening communication between both parties via properly prioritized evaluation factors.

## **2. Solicitation Preparation Phase**

Lohfeld argues in his 2012 *Washington Technology* article "Will low-price contracting make us all losers?" that LPTA is not being used effectively, therefore LPTA is not an effective evaluation method (Lohfeld, 2012). Given the recent increased use of LPTA, government needs to be making strides in using LPTA effectively. The government's take on requirements needs to shift from telling industry how they are to perform without considering their input, and move to engaging industry in requirements development early in the process (Lohfeld, 2012). When both parties understand the end goal, and work together to write requirements that speak to that level of effort, the RFPs could more accurately depict what the government is seeking to acquire. By engaging in discussions early, government is less likely to misstep and inadvertently write requirements too vague for which too many vendors are deemed technically acceptable.

Scott Calisti suggests in his *DAU AT&L* magazine article, "Lowest Price Technically Acceptable: Why All the Debate?" that industry continues to be

unwelcoming of LPTA as a means of evaluation, insisting that while cost is being driven down, so, too, is quality, stating that “LPTA drives us to only a ‘low cost, low quality’ solutions” (Calisti, 2015, p. 17). Industry insists LPTA “stifles innovation and squeezes corporate margins due to downward pressure on price” (p. 17), which ultimately “causes performance innovators to depart the market and reduce the quality of goods and services provided” (p. 17). While these observations are limited in scope, there is a compelling argument for the detractions of LPTA. These negative misnomers are rooted in the misuse of LPTA by the government. LPTA is not being used appropriately, and is driven so by the regulations, policy, guidance, and training that have misled acquisition professionals. Again, if the requirements are well-defined and the risk of unsuccessful contract performance is minimal, and price has been determined to be the only deciding factor for best value, then LPTA is the optimal choice for evaluation. The five DAU courses that assist in training contracting professionals in source selection skills and other agency mediums for training adhere to the appropriate use of LPTA, but the skills are either not being translated appropriately into use or are being misunderstood.

Calisti continues, “Industry contends that quality solutions and LPTA are mutually exclusive and we cannot buy quality goods and services” (Calisti, 2015, p. 20). If the government has determined their requirements and are certain where the dollar is limited on providing further returns, then industry is forced to offer higher performance for reduced cost to remain competitive, which cuts into profits and is undesirable for industry. As long as government is adhering to standards of best value, and not simply employing LPTA because resources for a proper tradeoff evaluation are limited or pressure to make a timely award are overwhelming, then industry’s profit margins are not of their concern.

### **3. Source Selection Evaluation Phase**

According to Robert Graham, in his 2007 article in *Contract Management* entitled “Improving Source Selections,” the “conspiracy of hope” occurs when “industry encouraged to be overly optimistic in their offers and government imposes little or no financial risk to those who submit such offers” (Graham, 2007, p. 28). The conspiracy is

that they can underbid early, and upon contract award begin to ramp up the costs via modifications and change proposals previously left undiscussed or not considered in the Independent Government Cost Estimate (IGCE). Graham refers to the IGCE as the Most Probable Cost (MPC), as it goes beyond the traditional IGCE to capture all possible costs, not just the minimum standard or average costs the government desires to spend. Using the MPC indicates that the government has thoroughly considered the probabilities of costs based on well-developed requirements (p. 32).

The importance of cost risk is important to note as a separate factor that can enhance proposal risk evaluation. Graham recommends determining a high-confidence cost estimate earlier in the source selection (as in, going beyond the IGCE) and elevating the cost risk evaluation factor to a more important position in the source selection evaluation (Graham, 2007, p. 32), meaning to separate and clearly define cost risk and proposal risk. Right now the source selection panels are confusing the two; “cost risk is meant to be a measure of the degree of difference between an offeror’s proposed cost and the government’s developed, most probable cost—not an identification of proposal risk” (p. 32). Therefore, if the government has a high-confidence cost estimate developed early in the acquisition process, then when it comes time to evaluate the proposals a clear price differential can be defined faster, thereby establishing the cost risk. “The cost-risk rating assesses the degree to which an offeror’s cost proposal for the contract line items compares with the government’s computed MPC for the same items” (p. 33). This practice would reduce the “conspiracy of hope” amongst industry, but requires a cultural and educational change amongst government personnel to understand these evaluation factors and the significance on the ability to make a decision based on sound business judgment. According to Graham,

These recommendations will establish the expectation at the outset of source selection that in order to evaluate the offeror’s cost proposal and develop the government’s probable cost, more work will be necessary (both before competitive range determinations and during the ensuing discussion period) for the cost evaluation team to assess cost risk and conduct meaningful discussions with all offerors to ensure maximum agreement. (Graham, 2007, p. 33)

Appropriate use of cost risk during evaluations could effectively change how cost savings are recognized during pre-award.

Another means of finding cost savings and improving best value is to reconsider what qualified as “technically acceptable.” Lohfeld opines in his 2012 article that “technically acceptable” should be a level of performance that is harder to achieve. He states that “setting the standards too low will let marginally acceptable bidders become candidates for contract award. These are the same bidders who would normally have been weeded out in best-value tradeoff procurements” (Lohfeld, 2012, para. 8). If all proposing vendors meet the minimum requirements, then those requirements were not challenging enough to eliminate potentially underperforming vendors. If every vendor makes it through the original round of eliminations (even the vendors who only marginally pass for acceptable), then the only factor on which they would be evaluated is price, which is not a responsible business decision when the performance could suffer tremendously. The government cannot give additional favor to a vendor that well exceeds a requirement over a vendor that only marginally passed; that vendor is considered at the same level as a marginally acceptable vendor. Therefore, raising the bar and developing requirements that are more difficult to achieve could be an effective way to utilize LPTA.

Lohfeld continues to criticize FAR 15.305(a)(2), the section of the FAR dedicated to proposal evaluation specifically for past performance, stating that,

When applying LPTA criteria to past performance evaluations, an offeror without a record of relevant past performance or for whom information on past performance is not available or is so sparse that no meaningful past performance rating can be reasonably assigned, the offeror may not be evaluated favorably or unfavorably on past performance (see FAR 15.305 (a)(2)(iv)). Therefore, the offeror shall be determined to have unknown past performance. In the context of acceptability/unacceptability, unknown shall be considered acceptable. (Lohfeld, 2012)

This pointed criticism from industry indicates that industry feels the past performance evaluation factor handicaps the evaluation process by lowering the technical acceptability bar for past performance reviews for vendors with unknown past performance. If “unknown” is considered “acceptable,” the acceptability rate for vendors in an acquisition could be unintentionally raised, causing a potentially unfair advantage for a vendor that

should not have been found acceptable. This problem may wane on its own as DOD personnel improve on CPARS reporting rates, but should be considered for new companies entering DOD contracting.

Multiple opinions insist that awarding LPTA with emphasis on the low price nearly guarantees poor performance from the contractor. Per Lohfeld's article,

The satisfaction of having awarded to the lowest price offer can soon be overshadowed by the burden of poor contractor performance. Slow contract staffing is an early indicator of contractor performance problems, followed by marginal technical accomplishment, late deliveries, and ultimately cost overruns. In the long run, the lowest bidder's performance reputation suffers, and the government is criticized for cost and schedule overruns and for failing to manage their program correctly. In the end, everyone loses. (Lohfeld, 2012, para. 18)

While this is merely an opinion, it is a perception from industry that LPTA is an indicator that government does not value innovative solutions, nor high-quality performance. If industry has these perceptions, there may be indication of a self-fulfilling prophecy where, regardless if this opinion is true, the mere existence of that opinion in industry could make the hypothetical outcome a reality. The contractor decides their quality of performance on a contract; if there is an underlying perception by that contractor that LPTA means lower quality performance, there may be an increased likelihood that lower quality performance naturally occurs as a result. This can, however, be mitigated throughout the life of the contract by the active monitoring and surveillance performed by the government Contracting Officer's Representative (COR) appointed to the contract. With the help of the COR, some common ground may be found between government and industry perceptions of how best value is being obtained by the government, through the process of reporting past performance information.

## **I. CONTRACTOR PAST PERFORMANCE INFORMATION**

In 2009, the Office of Federal Procurement Policy (OFPP) release a memorandum titled "Improving the Use of Contractor Performance Information" that described the need for a system that would hold contractors accountable for past performance. At that time, agencies used "fragmented methods to collect and maintain contractor performance



information” (OFPP, 2009, p. 1), including manual performance reviews that are kept in the paper contract file, or were utilizing “internal data systems that are not available to acquisition officers outside that agency” (p. 1). The limited distribution of performance information handicapped the acquisition system in that future acquisition teams were unable to retrieve the past performance information that could be critical in evaluating a contractor’s performance history. In this memorandum, the FAR was officially changed effective July 1, 2009 to require agencies to submit an electronic record of contractor performance in the Past Performance Information Retrieval System (PPIRS), which is a web-based system that serves as “the single, government-wide repository for contractor performance information” (p. 1).

In 2004, the report-building system CPARS was developed by the Navy and became the mandatory system for capturing past performance in the DOD (Guidance, 2014). CPARS is a web-enabled system designed to host a history of contractor performance on specific contracts, as submitted by the receiver of the contractor’s supplies or services. CPARS is a system of processes that assists the assessing official in assembling a review of a contractor’s performance based on various limited elements, including quality of the product/service, schedule quality, ability to control cost, quality of business relations, utilization of small business, and key personnel management, as relevant to the specific contract (Guidance, 2014).

The reporting process is designed to be fair and objective. The assessing official or contracting officer assembles a submission to the CPARS system that provides an evaluation of the contractor’s performance for the various elements. The draft report created in CPARS is sent to the contractor, who is allowed 30 days to respond to the report and provide comments or rebuttals for the information. The contractor’s response is reviewed by the assessing official and is given time to revise the original assessment and narrative accordingly; if there is a disagreement with the assessment, a government official one level above the assessing official organizationally will review and finalize the assessment (Guidance, 2014, p. 25–26).

Prior to establishment of major past performance review systems (like PPIRS), past performance information needed for source selection review boards was so

unreliable that Source Selection Evaluation Boards (SSEBs) met the delivered data with skepticism and distrust. The unreliability of that data was based on lack of standardized reporting measures for documenting and filing past performance data. Further, when it was finally launched, PPIRS lacked oversight and management. Lack of accountability, unclear system metrics and tools, and varying definitions for rating factors contributed to overall frustration with the past performance reporting process. The first hurdle is to get data on past performance, the second is to ensure that the data is reliable, and the third is to use that data appropriately to make source selection decisions; if the data cannot be trusted, then it cannot be used, and an entire evaluation factor's opportunity is wasted.

Annie Meeks discusses the concept of oversight in the post-award phase of contracting in her 2011 NCMA article, "The Buck Stops...Where?: Post-Award Accountability for Large Service Contracts." She argues that without sufficient contract oversight, knowledge is lost and minor problems go undetected and become major problems if not crises. Meeks reviews the three necessary levels of oversight for thorough contract management, maintained by both government and contractor:

- Quality Control: the plan designed by the Contractor, enforced by the Contractor, to review quality of performance;
  - Quality Assurance: the plan for review of Contractor performance, enforced by the Government, to review quality of Contractor performance;
  - Quality Oversight: the plan for review of Government evaluation of Contractor performance, enforced by the Government, to review how the Government's processes are being enforced to review Contractor performance.
- (Meeks, 2011, p. 37)

When both the government and the contractor are held responsible for contract oversight, fewer details are missed in performance evaluations, quality is maintained in accordance with contract requirements, and reporting via the necessary channels and systems is used to benefit future evaluations.

In all best value evaluations, evaluation factors must clear, measurable, given weight, and understood by all parties. When the government was evaluating contractor performance and either party did not understand that which was being evaluated or the factors being utilized, resources would be wasted in the discussions over what was being

entered into official record (if anything was being entered). Without oversight for a system that maintains past performance information, there is no incentive to create records of past performance. Without past performance information, future source selection evaluation boards go without pertinent information to make quality best value decisions. The qualifications of the COR should therefore be adequate for the work they are performing. The COR needs not only to intimate technical knowledge of the work being performed to be able to adequately convey a comprehensive review of that performance; “staff should be subject matter experts trained in the observation of tasks and factual measurement techniques” (Meeks, 2011, p. 38). CORs should also have the work ethic to physically perform the oversight and surveillance responsibilities of COR to ensure that evaluation of service provider work is thorough and reliable. COR training provides appropriate theoretical application of COR skills, but only through repetitive practice and thorough understanding of performance evaluation factors can post-award evaluation provide appropriate data that reflects the quality desired when the best value processes were developed during source selection.

“Especially in this era of economic recession, service providers and government agencies cannot afford to waste time, money, and resources on failed service delivery contracts,” (Meeks, 2011, p. 42) particularly when the goal of best value processes was to gain more outcome without more dollars. Without proper evaluation of contract performance, there is no firm way of knowing whether the government received what it paid for. While the U.S. is currently emerging from a recession, the defense budget cuts are growing in size and as a result, contract management teams must operate with limited resources. Therefore, once the contract has been awarded utilizing the evaluation method that best suits the government’s interest, effective contract management must be performed to ensure that contractors are delivering on their requirements. Undelivered requirements are indicative of taxpayer dollar waste, even more so than dollars lost in evaluations and negotiations.

GAO Report 09-374, *Federal Contractors: Better Performance Information Needed to Support Agency Award Decisions*, suggested that the Administrator of the OFPP work to:

- Standardize evaluation factors and rating scales government-wide for documenting contractor performance;
- Establish policy for documenting performance-related not currently captured in PPIRS (like terminations, subcontractor management, and other pertinent measurements);
- Define government-wide roles and responsibilities for managing and overseeing PPIRS data;
- Develop system tools and metrics for agencies to use in monitoring and managing the documenting of contractor performance;
- Take appropriate action to finalize proposed changes to the FAR that clarify responsibilities and performance documentation requirements for contract orders, including those against the GSA multiple award schedule. (GAO, 2009, p. 21)

OFPP designated CPARS as the single government-wide system for entering evaluations, and by October 2010 all agencies had transitioned to using CPARS. The CPARS Guide has standardized definitions for ratings, which has thus addressed the issue identified in GAO Report 09-374 of ratings having unclear definitions.

The GAO reported an increase in compliance metrics in 2013 in GAO Report 13-589, *DOD Actions to Improve the Reporting of Past Performance Information*, from 56 to 74 percent from October 2011 through April 2013 (GAO, 2013, p. 2). While timeliness of the reports continues to be an issue, the improvement in report completion is a step forward for improving past performance tracking for major contract actions. Source selection evaluations that depend on reliable CPARS reporting therefore have some hope that the culture in the acquisition environment is gaining stronger reverence for past performance information, and will make stronger strides to comply with regulations dictating proper reporting.

It was reported in the GAO Report 14-707, *Contractor Performance: Actions Taken to Improve Reporting of Past Performance Information*, that “Section 806 of the National Defense Authorization Act (NDAA) for FY 2012 required DOD to develop a strategy to ensure that evaluations in past performance databases used for making source selection decisions are complete, timely and accurate” (GAO, 2014a, p. 7). The OFPP had worked with the Integrated Award Environment, the CPARS program office and an interagency working group to update the CPARS guide (which was released in November

2012), and the FAR Council agreed to revise the FAR in September 2013 to “enhance various elements of documenting contractor performance,” including:

- Standards for timeliness (must be completed within 120 days of the end of evaluation period)
- Standards for completeness (including minimum evaluation factors to be completed)
- Assigning responsibility for completeness of evaluations (default is the KO, but the requiring agency is responsible for establishing roles and responsibilities for CPARS reporting)
- Management accountability (agencies are required to evaluate compliance and assign responsibility for CPARS reporting)
- Ensuring past performance submissions are consistent with award fee evaluations (award and incentive fee evaluations are to be included as part of the past performance evaluations)  
(GAO, 2014a, p. 8)

While the DOD has generally improved its CPARS reporting, the rate of improvement varies by agency. From April 2013 to April 2014, the DOD only improved by 7% (from 76% compliance rate to 83% compliance rate, based on contracts with dollar thresholds that are generally higher than the simplified acquisition threshold) (GAO, 2014a, p.10). DOD has the highest compliance rate amongst the top ten agencies that perform the most federal contracting. While any improvement is progress, this still means that for contracts below the SAT there is less stringent regulation for CPARS reporting. Furthermore, the reporting for contracts above the SAT, the compliance is still only at 83%, meaning that approximately 17% of the larger contracts have CPARS reports that are not being filed, past performance metrics not being captured, and an immeasurable number of future source selections are going without that data.

Past performance information is essential to bolster the probability for successful future contracts. Regardless of whether the reviews are positive or negative, the information is valuable for source selection boards looking to make decisions on their future acquisitions based on the reviews from contractor’s past work. DOD is pursuing new and inventive means of streamlining vendor selection based on the quality of past contract performance. In 2014 Elliot Branch, Deputy Assistance Secretary of the Navy (Acquisition and Procurement) released a memorandum announcing the Superior Supplier Incentive Program (SSIP):

“The Superior Supplier Incentive Program is a pilot program to incentivize contractor performance by recognizing exceptional contractor conduct in the areas of cost, schedule, performance, quality, and business relations. The program assesses three years’ worth of data, using the Contractor Performance Assessment Reporting System (CPARS)”  
(Branch, 2014, p, 1).

In June 2014, the Army began employing the SSIP and released its own list of 30 vendors, broken out into three tiers (Tier 1 being the best), and released the list to the public (Clark, 2014). The goal of the SSIP is to incentivize contractors to achieve exceptional performance that will ideally be reflected in the CPARS report. The problem with the SSIP design is that CPARS is currently under- and improperly utilized by the DOD. Success of the SSIP test program is dependent upon reliable CPARS reporting. If the quality of CPARS reporting increases over time, there is reason to believe that the SSIP test program could evolve into a beneficial tool for the DOD.

## **J. SUMMARY**

This chapter contains a review of the available literature relevant to source selection methodologies and the best value continuum, proper utilization of non-cost factors, and increasing use of LPTA. The modern acquisition workforce was discussed in terms of experience, knowledge, and comfort with best value procurements, as well as the need for acquisition education. Government best value contracting reform was explored, as well as criticisms from industry of government source selection practices. Past performance information and its importance for future acquisition was discussed, to pave the way for its importance in the outcomes of contracts for this research. The next chapter will review the methodology for this study, including a brief overview of the contracting systems used to gather reports and data, how the contract data was acquired, description of the data, descriptive statistics, and data issues.

### **III. METHODOLOGY**

This section will explain the sources and methods for collecting contractual data used in this study, as well as the goal for establishing the relationship between the choice of source selection methodology (either lowest price technically acceptable or tradeoff) and the resultant measure of success of the contract (the CPARS average rating). This chapter will review the methodology for this study, including a brief overview of the contracting systems used to gather reports and data, how the contract data was acquired, description of the data, descriptive statistics, and data issues.

#### **A. PROGRAM EXECUTIVE OFFICE ENTERPRISE INFORMATION SYSTEMS**

Within the Department of the Army there are six Secretariats, one of which is ASA (ALT). ASA(ALT) sustains the mission to “provide our Soldiers a decisive advantage in any mission by maintaining quality acquisition professionals to develop, acquire, field, and sustain the world’s best equipment and services through efficient leveraging of technologies and capabilities to meet current and future Army needs” (“Mission Statement,” n.d.). There are twelve major program executive offices within the Office of the ASA(ALT), one of which is PEO EIS.

The PEO EIS is a \$3.5 billion Army organization comprised of 34 acquisition programs (“About PEO EIS,” n.d., para. 2). Each program office employs military, government civilians and contractor support. PEO EIS leads the Army in development and implementation of major information technology (IT) systems in multiple fields, including business management, enterprise resource planning (ERP), biometrics, personnel, training, communications, infrastructure, audit readiness, logistics and financial management (“About PEO EIS,” n.d., para. 2).

PEO EIS typically purchases COTS major IT business systems on a competitive basis. In a \$3.5 billion portfolio of programs, the contract negotiations can be extensive, and the significance of the tax dollars spent is not taken lightly. The Better Buying Power

initiatives are employed to the fullest extent possible, and garnering the best value for the Soldier is the goal of every PEO EIS procurement.

For this study, contracts awarded for PEO EIS will be sampled for evaluation of the outcomes of the contract against the best value methodology utilized for evaluation during competition to best evaluate how the Army is currently utilizing best value methods for complex IT contracts.

## **B. ELECTRONIC CONTRACTING SYSTEMS**

The current contracting environment requires copious amounts of paperwork and data tracking. The best means for managing contracts, particularly of the larger variety, is to utilize electronic contracting systems and data repositories, many of which limit access only to those with a need to know, or those directly involved with the acquisition. This section will briefly discuss the individual electronic contracting systems that were accessed for data during this study.

### **(1) Virtual Contracting Enterprise**

The Virtual Contracting Enterprise (VCE) is a suite of web-based contracting tools developed and owned by ACC for use by its employees and their customers in the performance of their daily duties acquiring supplies and services for the U.S. Army (“VCE Mission,” n.d.). The suite of tools includes a Business Intelligence Metrics & Reporting (VCE-BI) module out of which ad-hoc reports can be generated that compile contractual information for a limited number of data fields. The VCE-BI module has the ability to pull data from FPDS-NG and the VCE-Acquisition Management module (which contains detailed contract data beyond the information captured in the Contract Action Report [CAR] for FPDS-NG).

### **(2) Federal Procurement Data System-Next Generation**

The Federal Procurement Data System-Next Generation (FPDS-NG) contains contractual data for contract actions with estimated values of \$3,000 or more, or that may be \$3,000 or more, including every modification to that contract (“About FPDS-NG,” n.d.). The contract data captured on a CAR, which is completed by the Contracting



Officer after each contract action, is stored in FPDS-NG, and fed to other outside systems, including VCE.

(3) Paperless Contract Files

The Paperless Contract Files (PCF) system is a module within VCE that is a complete document management, storage and workflow solution for the contracting workforce at ACC. PCF was developed by ACC to assist the contracting workforce to manage immense amounts of documents contained in a traditional contract file in one place. PCF is a secure, web-based application that can be accessed by the contracting workforce at ACC, and archives historical files that were originated in the system by a member of ACC. Electronic contract file documents were retrieved from PCF to create a digital contract file that was reviewed to obtain the data for this research.

(4) Contractor Performance Assessment Reporting System

CPARS is a web-enabled system designed to host a history of contractor performance on specific contracts, as submitted by the receiver of the contractor's supplies or services. CPARS is a system of processes that assists the assessing official in assembling a review of a contractor's performance based on various limited elements, including quality of the product/service, schedule quality, ability to control cost, quality of business relations, utilization of small business, and key personnel management, as relevant to the specific contract. The primary purpose of the CPARS is to ensure that current, complete and accurate information on contractor performance is available for use in procurement source selections (Guidance, 2014, p. 13).

According to the CPARS Guide, and FAR Part 42.15, CPARS reports are required for any action in excess of the Simplified Acquisition Threshold, and over \$1M for Information Technology (see Figure 2) (Guidance, 2014, p. 21). CPARS is meant to capture data for unclassified contracts only.

<u>Business Sector</u>	Dollar Threshold <sup>1</sup>	Reviewing Official <sup>2</sup>
<b>Civilian Agencies (excludes DoD):</b>		
Systems and Non-Systems	>Simplified Acquisition Threshold	One level above the Contracting Officer, as determined by Department or Agency policy
Architect-Engineer	≥\$30,000; All Terminations for Default	One level above the Contracting Officer, as determined by Department or Agency policy
Construction	≥\$650,000; All Terminations for Default	One level above the Contracting Officer, as determined by Department or Agency policy
<b>DoD Services and Agencies:</b>		
Systems (includes new development and major modifications)	>\$5,000,000	One level above the PM <sup>d</sup>
Non-Systems		
Operations Support	>\$5,000,000 <sup>d</sup>	One level above the AO
Services	>\$1,000,000	One level above the AO
Information Technology	>\$1,000,000	One level above the AO
Ship Repair and Overhaul	>\$500,000	One level above the AO
Architect-Engineer	≥\$30,000; All Terminations for Default	One level above the AO
Construction	≥\$650,000; All Terminations for Default	One level above the AO
<p><sup>1</sup>The contract/order thresholds for CPAR collection (see FAR 42.1502) apply to the “aggregate” value of contracts/orders; that is, if a contract’s/order’s original award value were less than the applicable threshold but subsequently the contract/order was modified and the new value is greater than the threshold, then evaluations are required to be made, starting with the first anniversary that the contract’s/order’s face value exceeded the threshold. If the total contract/order value including unexercised options and orders (for IDIQ contracts, total estimated value of unexercised options and orders) is expected to exceed the collection threshold, initiate the collection process at the start of the contract/order. Buying activities may choose to collect performance evaluations for awards below these thresholds.</p> <p><sup>2</sup>Only required when the contractor indicates non-concurrence with the CPAR or if otherwise requested by the contractor during the 60-calendar day comment period.</p> <p><sup>3</sup>(Or equivalent individual) responsible for program, project or task/job order execution.</p> <p><sup>4</sup>For contracts/orders under the reporting thresholds, buying activities should continue to accumulate contractor performance data from existing management information systems, which already capture data on timeliness of delivery and quality of product or service (an example of a performance information collection systems is the Past Performance Information Retrieval System - Statistical Reporting Module)</p>		

Figure 2. Business Sector, Dollar Threshold and Reviewing Official (from CPARS, 2014)

Dollar thresholds are applied to the aggregate value of the contract action; therefore if a contract is modified over time to increase the total dollar value, then if the new value exceeds the threshold, a CPARS report is required. If a contract were to remain below that threshold, however, the CPARS report is not required. By only requiring past performance information for larger dollar procurements, countless smaller dollar procurements go unevaluated. Therefore, this study reviews CPARS reports specifically for contracts related to IT with contract values greater than \$1M for PEO EIS in order to have a higher likelihood of obtaining a complete CPARS report.

## **C. COLLECTION OF CONTRACT DATA**

This section will discuss the criteria utilized to assemble a list of eligible contracts for this study, as well as the data collected from those contracts.

### **1. Criteria for VCE Report**

Ad-hoc reporting, in terms of business intelligence reports, refers to a report that is assembled “as the occasion requires” based on the needs of the end-user. For this study a report was generated with the following criteria:

- C-Type Contracts (later re-ran the report to include all types of contracts, as PEO EIS has fewer C-type contracts)
- Closed between 2001 and 2014 (for greater likelihood for completed CPARS reports)
- Above the SAT
- Best value method listed (LPTA or tradeoff) (later re-ran the report to disregard this field, as the VCE-Acquisition Management module was not required until 2012, indicating that this field does not capture 100% of contract files for the specified time range)

This report was provided by the VCE data helpdesk based on PEO EIS contract data that was entered into FPDS-NG from CAR reports created by contracting officers for the respective contract actions. The resulting report of 124 contract actions were deemed acceptable potential files for this project. The list of contracts was sent to the leadership at ACC-Rock Island Contracting Center at the Rock Island Arsenal in Illinois and to the ACC-New Jersey Contracting Center at Picatinny Arsenal in New Jersey, as these two contracting centers facilitate in the majority of PEO EIS major contract actions.

The files that were retrievable from the electronic systems were provided and evaluated for information in accordance with the aforementioned data fields.

## **2. Data Collection Rubric**

The data collection rubric was designed to capture 96 potential data points that are typically found in complex contract actions. The five categories of data collected included:

- Basic Contract Information
- Acquisition Complexity
- Environmental Factors
- Outcome Variables
- Other

Basic Contract Information included the contract number, name of the project, North American Industry Classification System (NAICS) code and Product Service Code (PSC).

Acquisition Complexity measured the complexity of the procurement with fields such as the use of LPTA or tradeoff, number and type of evaluation factors, the FAR section employed in the acquisition (FAR Part 12, 13 or 15), use of incentives, etc. This data created a broad understanding of the difficulty of the acquisition, the technicality of forethought on the part of the acquisition team, and lead into evaluating the environmental factors.

Environmental Factors took measure of the circumstances that surrounded the source selection, such as number of reviews of the proposals, number of personnel on the source selection team, the quality of the file documentation. This data created a broad understanding of the involvedness of the acquisition team in the procurement and the difficulties that may have occurred in selecting a vendor.

Outcome Variables included the measurements pulled from the CPARS reports (Cost, Quality, etc.), Earned Value Management (EVM), where applicable, whether or not a protest took place, and other such measurements of contract outcomes. This data was important to connect to the complexity of the acquisition to find a potential cause-and-effect relationship between the complexity, the method, and the outcomes of either

LPTA or tradeoff. Other data fields captured included number of Evaluation Notices, Clarification Requests, and Deficiency Reports.

#### **D. DATA DESCRIPTION**

This study is aiming to establish whether the CPARS ratings are impacted by the choice of LPTA or tradeoff methods during source selection evaluation.

The Dependent Variable (DV) is the outcome or effect of a change in the Independent Variable (IV), the input or cause in the equation. For this analysis the CPARS rating and the PALT are the DVs. PALT is the calculation of the time leading up to award (in days), starting at the time the requirements package is received by the contracting office. The CPARS ratings are a proxy measure of contract success or failure, based upon the reviews provided by the customer. CPARS ratings are provided by the assessing official in the CPARS report cards for areas such as Cost, Quality and Schedule, ranging from Unsatisfactory (not meeting the standard contractual expectations) to Excellent (exceeding contractual expectations). The ratings are given in Likert-style responses where 1=Unsatisfactory, 2=Marginal, 3=Satisfactory, 4=Very Good, and 5=Excellent. For this study the overall CPARS score was calculated by averaging the following CPARS factors: quality, schedule, management of key personnel, and small business use. The average score was used because of the limited sample size; for future research with larger sample sizes each CPARS rating could be used individually to measure contract success or failure in each rating category. In this case, both individual and combined CPARS scores were used (note: individual scores were examined without success due to data limitations). Specifically, differences in CPARS rating between LPTA and tradeoff acquisition strategies were sought by examining CPARS quality ratings, cost ratings, and CPARS business relationship rating individually, and also by looking for differences using the average CPARS rating for each acquisition (in other words, the average of quality, cost and business relationship scores).

The independent variable (IV) is the choice of utilizing either LPTA or tradeoff method, as this variable is determined by the acquisition team and therefore could impact

the DV. The acquisition team chooses LPTA or tradeoff prior to RFP release and source selection evaluation. The IV is labeled LPTATO and it is a binary variable where 0=LPTA and 1=tradeoff.

Finally, there is one covariate variable. Covariates are secondary variables that can also affect the relationship of primary interest: the relationship between the IV and the DV. Specifically, covariates are variables other than the independent variable that potentially affect the outcome variable, or DV. In this case, the covariate is contract dollar value (VALUE), and it is a continuous variable. The dollar value of a contract affects the number of reviews it has to go through, thus affecting the PALT. Higher dollar contracts typically endure more reviews, and thus have longer PALTs. The opposite is typically true for lower dollar value contracts. In this case, the goal is to parcel out the effect of the covariate VALUE in order to more clearly see the effect the contracting methodology (LPTATO) has on the outcome variables (PALT and CPARS ratings).

The goal of this analysis is to see if there is a cause-effect relationship between the choice of evaluation method and the PALT and CPARS ratings. This analysis will measure whether there is a relationship between the DVs and the IV, and the degree of strength or significance of that relationship.

## **E. SUMMARY**

This chapter has reviewed the methodology for this study, including a brief overview of the contracting systems used to gather reports and data, how the contract data was acquired, description of the data, descriptive statistics, and data issues. The next chapter discusses the data analysis and findings.

## **IV. DATA ANALYSIS AND FINDINGS**

This chapter explains the data analysis and statistical findings that resulted from the assessment. Explanation of the statistical methods used, assumptions applied to normalize the data, analysis, and whether or not the research questions were answered are discussed.

### **A. DESCRIPTIVE STATISTICS**

Basic descriptive statistics for each variable are shown in Table 1. The table presents three figures for each variable: (1) the total for all the data, (2) the total for LPTA contracts, and (3) the total for tradeoff contracts.

Descriptive Statistics						
Variable	Obs	Mean	SD	Min	Max	
<b>PALT (days)</b>	<b>8</b>	<b>256.88</b>	<b>392.16</b>	<b>50</b>	<b>1216</b>	<b>ALL DATA TOTAL</b>
	3	156.33	94.56	50	231	LPTA
	5	317.20	502.52	84	1216	TRADEOFF
<b>CPARS Quality (rating)</b>	<b>19</b>	<b>3.47</b>	<b>.96</b>	<b>1</b>	<b>5</b>	<b>ALL DATA TOTAL</b>
	14	3.50	1.02	1	5	LPTA
	5	3.40	.89	3	5	TRADEOFF
<b>CPARS Cost (rating)</b>	<b>9</b>	<b>3.56</b>	<b>1.13</b>	<b>1</b>	<b>5</b>	<b>ALL DATA TOTAL</b>
	8	3.88	.64	3	5	LPTA
	1	1	--	1	1	TRADEOFF
<b>CPARS Business Relationship (rating)</b>	<b>19</b>	<b>3.42</b>	<b>.96</b>	<b>1</b>	<b>5</b>	<b>ALL DATA TOTAL</b>
	14	3.43	1.02	1	5	LPTA
	5	3.40	.89	3	5	TRADEOFF
<b>CPARS Overall Average (rating)</b>	<b>19</b>	<b>3.42</b>	<b>.99</b>	<b>1</b>	<b>5</b>	<b>ALL DATA TOTAL</b>
	14	3.45	1.01	1	5	LPTA
	5	3.27	1.01	2.33	5	TRADEOFF
<b>VALUE (dollars)</b>	<b>19</b>	<b>\$3,536,880</b>	<b>\$4,263,114</b>	<b>\$13,370</b>	<b>\$17,800,000</b>	<b>ALL DATA TOTAL</b>
	14	\$2,639,221	\$2,851,057	\$13,370	\$7,700,654	LPTA
	5	\$6,050,324	\$6,681,982	\$1,613,496	\$17,800,000	TRADEOFF

Table 1. Descriptive Statistics for Data Set

## B. DATA ISSUES

The report that was retrieved from VCE contained a number of contract files that were originated at the Army Contracting Command, National Capital Region (ACC-NCR), which closed its colors and closed on July 11, 2013 (Gore, 2013). The contract files that were originated at ACC-NCR for PEO EIS were not fully accessible as those files were not consistently stored in the PCF module prior to the closure of the contracting center. Therefore, a significant portion of data that may have assisted in this research was not accessible. This project, therefore, is an incomplete analysis of acquisition history for PEO EIS, given the recent migration to utilizing a new group of contracting centers since 2013. This limitation on data collection should be considered



throughout the study; future research could benefit from gathering contractual data for longer than two years from a relatively new contracting organization.

The documentation for the files that were electronically accessible was sparse, indicating that multiple contracting professionals had worked the actions without a single point responsible for complete contract file management, resulting in relatively incomplete electronic contract files. The factor of human error should be considered here, as internal controls are not wholly monitoring the management of complete contract files within the system. Internal controls for historical data filing are another issue for potential future research.

With only 19 cases, the sample size is small. Power calculations suggest the need for 14 cases for each contracting methodology (i.e., 14 LPTA cases and 14 tradeoff cases) in order to achieve adequate power ( $\alpha = .05$ ,  $\beta = .80$ ). The data are unbalanced with respect to the number of cases for each contracting methodology. There are 14 LPTA cases and 5 tradeoff cases. This unbalanced design can cause ambiguity about the mean as the intercept and make assignment of sums of squares more difficult. There are, however, solutions to these issues. A weighted mean can be used in place of the grand mean (normally the intercept in a balanced design), and the Stata software (version 12.1) automatically handles the assignment of the sums of squares. Thus, we proceeded with our analysis despite these issues.

### **C. DATA ANALYSIS**

Because the intent is to analyze differences in contract outcomes (PALT and CPARS ratings) based on contracting methodology (LPTA or tradeoff), a group comparison statistical methodology is necessary. In other words, the contracting methodologies are divided into two groups (LPTA and tradeoff), and analyzed to find if there are differences in contract outcomes (PALT and CPARS ratings) by group.

A technique called multivariate analysis of covariance (MANCOVA) was initially used to assess group differences. Results could not be obtained given the high collinearity between the variables. In the case of MANCOVA, collinearity occurs when the dependent variables are very highly correlated with each other, to the point of being

indistinguishable from each other. The general rule of thumb is that dependent variables correlated at .80 or higher are likely to be collinear (Dattalo, 2013). In this case, all of the dependent variables are correlated at .78 or higher, preventing accurate analysis.

Given the existing collinearity, each of the dependent variables was examined separately. In other words, differences in contract outcomes (PALT and CPARS ratings) were sought out *individually*. Although multivariate methods like MANCOVA paint a more complete picture of the relationships between contracting strategy (LPTA or tradeoff) and subsequent outcomes, univariate techniques can also help piece that picture together, albeit in a fragmented way. Thus post-hoc analyses were performed in which PALT and CPARS ratings were analyzed separately. Again, because the outcome variables were assessed individually, the methodology changed from a *multivariate* test (MANCOVA) to a *univariate* test, known simply as analysis of covariance (ANCOVA).

ANCOVA addresses the following questions: Are mean differences among the groups (after adjusting for covariate effects) likely to have occurred by chance? Taken from another angle, is there a significant difference between the mean value for DVs (PALT and CPARS ratings) in the LPTA acquisitions versus the mean value for DVs (PALT and CPARS ratings) in the tradeoff acquisitions once the effect of the covariate (contract dollar value, referred to as VALUE) has been parceled out? ANCOVA examines the relationships between the dependent variables (PALT and CPARS ratings) and the independent variable (choice of LPTA or tradeoff methodology) while taking into account the effect the covariate (VALUE) might have on the outcome variables (PALT and CPARS ratings).

#### **D. ASSUMPTION TESTING**

Before conducting the ANCOVA, certain assumptions about the data were tested. First, univariate normality was assessed by performing the Shapiro-Wilk test to check whether a sample came from a normally distributed population. Both PALT and contract value (VALUE) were deemed to be non-normal. Both variables were normalized via a logarithmic transformation. Both variables passed the Shapiro-Wilk normality test once transformed.

Second, linearity was assessed by examining scatter plots of the dependent variables (PALT and CPARS ratings) and the covariate variable (VALUE). The plots revealed linear relationships between the variables.

Third, homogeneity of regression was assessed by performing an analysis of variance (ANOVA, which is similar to an ANCOVA but does not contain a covariate variable) that included the independent variable (LPTA or tradeoff), the covariate VALUE, and the interaction between the independent variable and the covariate. The interaction term was not significant, which indicates that the relationship between the dependent variables (PALT and CPARS ratings) and covariate (VALUE) is the same at both levels of the independent variable (LPTA or tradeoff). Hence, the assumption of homogeneity of regression is upheld.

Finally, homogeneity of variance between groups was assessed using Bartlett's Test. For most of the outcome variables, the results showed the differences in variance among the groups (LPTA and tradeoff) are not significant, thus the assumption of homogeneity of variance is upheld. The contract's Cost rating (i.e., the CPARS rating that assesses cost performance of the contractor using a Likert-type scale) only had one case for the tradeoff methodology (8 cases for the LPTA methodology), thus homogeneity of variance could not be adequately assessed for that outcome variable.

## **E. RESULTS**

The results of the analysis show that the only situation where source selection methodology (LPTA or tradeoff) produced significantly different contracting outcomes was in the case of the contractor's CPARS cost rating. Essentially, the cost rating is lower for tradeoff contracts. However, because there was only one tradeoff case, these results cannot be relied on with any firm accuracy. More cases are needed to confirm these results, as will be addressed in Chapter V regarding areas for further research. Table 2 shows the results of this analysis.

Source	Partial SS <sup>^</sup>	df	MS <sup>^^</sup>	F	Prob > F
Model	7.57	2	3.79	8.57	.0174*
LogVALUE	.23	1	.23	.51	.5020 ns
LPTATO	6.39	1	6.39	14.48	.0089**
Residual	2.65	6	.44		
Total	10.22	8	1.28		

\*  $p < .05$  \*\*  $p < .01$   
<sup>^</sup> Partial sum of squares <sup>^^</sup> Mean square  
Number of Observations = 9  
Root Mean Squared Error = .66  
 $R^2 = .7408$   
Adjusted  $R^2 = .6544$

Table 2. Analysis of the Covariance Using CPARS Cost Rating as the DV

#### F. ADDITIONAL ANALYSIS

Perhaps more telling from this sample are the relationships between the variables themselves. The correlations are shown in Table 3.

	PALT	CPARS Avg	CPARS Quality	CPARS Cost	CPARS Business Relationship	LPTATO	VALUE
PALT	1.00						
CPARS Avg	-0.78	1.00					
CPARS Quality	-0.94	0.94	1.00				
CPARS Cost	-0.78	1.00	0.94	1.00			
CPARS Bus Rel	-0.88	0.98	0.99	0.98	1.00		
LPTATO <sup>^</sup>	0.99	-0.82	-0.96	-0.82	-0.90	1.00	
VALUE	0.95	-0.87	-0.95	-0.87	-0.92	0.93	1.00

<sup>^</sup>Point biserial correlation because LPTATO is a binary variable where 0 = LPTA and 1 = tradeoff

Table 3. Correlation Table—All Data

The items in the table with a correlation coefficient +0.70 between the variable in the first column and the variables in the column headers indicates a strong positive linear relationship between those two variables. There appears to be a strong positive linear relationship between LPTATO and PALT (.99) and contract value and PALT (.95). This relationship is most likely due to the notion that complex, higher dollar contracts take a longer time to award; therefore, tradeoff acquisitions (LPTATO = 1) take more time to award (an increased PALT time).

The items in the table with a correlation coefficient -0.70 between the variable in the first column and the variables in the column headers indicates a strong negative linear relationship between those two variables. There appears to be a strong negative linear relationship between the CPARS ratings and PALT (valuing from -.78 to -.88 to -.94 for Cost, Business Relationship and Quality, respectively, with the correlation between the average CPARS scores and PALT being -.78), suggesting that the CPARS ratings decline as the PALT (days) increases. This relationship might indicate that even with increased time dedicated to a procurement, there is no guarantee that the CPARS ratings will improve. PALT can be increased due to bureaucratic levels of process reviews that do not add value, therefore PALT is not always an indicator of increased quality in the product (the acquisition package). A low-quality acquisition package may lead to confusion between the government and the contractor regarding deliverables, thereby resulting in lower CPARS ratings. Likewise, the shorter PALT could be the result of simple LPTA acquisitions (also known for low complexity, clear requirements), therefore positive CPARS rating are easier to achieve. An increase in data could lend more insight to this relationship and confirm these notions.

After the original correlations were analyzed, analysis was performed on the relationships between the LPTA acquisitions and the CPARS outcomes (see results in Table 4).

	<b>PALT</b>	<b>CPARS Quality</b>	<b>CPARS Cost</b>	<b>CPARS Business Relationships</b>	<b>CPARS</b>	<b>Value</b>
<b>PALT</b>	1					
<b>CPARS Quality</b>	0.29	1				
<b>CPARS Cost</b>	0.29	1	1			
<b>CPARS Business Relationships</b>	0.29	1	1	1		
<b>CPARS</b>	0.29	1	1	1	1	
<b>Value</b>	0.6555	-0.5326	-0.5326	-0.5326	-0.5326	1

Table 4. Correlations When LPTA Methodology Was Chosen

The data in Table 4 shows that the relationship between and PALT and CPARS for LPTA acquisitions is 0.29, indicating a moderately positive linear relationship. This indicates that for acquisitions with a longer PALT time, the CPARS rating may be better, possibly the result of better efforts being applied to the contract setup leading to better contractor performance overall. There is a negative relationship between the contract value and the CPARS ratings for the LPTA acquisitions, suggesting that higher dollar LPTA contracts are not viewed to be as successful as lower dollar LPTA contracts (in terms of CPARS ratings).

The relationship between PALT and contract value for LPTA acquisitions is a stronger positive relationship at 0.65, perhaps a result of the complexity of the contract – the higher the dollar value on the contract, the more complex the contract, the longer the PALT.

Analysis was also performed on the relationships between the tradeoff acquisitions and the CPARS outcomes (see results in Table 5). In Table 5, the CPARS Cost rating was removed because there was only one value, resulting in skewed statistics due to insufficient observations.

	<b>PALT</b>	<b>CPARS Quality</b>	<b>CPARS Business Relationships</b>	<b>CPARS Cost</b>	<b>Value</b>
<b>PALT</b>	1				
<b>CPARS Quality</b>	-0.2594	1			
<b>CPARS Business Relationships</b>	-0.2594	1	1		
<b>CPARS Cost</b>	-0.5243	0.9584	0.9584	1	
<b>Value</b>	0.9836	-0.3712	-0.3712	-0.6181	1

Table 5. Correlations When Tradeoff Methodology Was Chosen

As discussed previously, the relationship between PALT and contract value for tradeoff acquisitions is a stronger positive relationship at 0.9836, almost a perfect relationship. This may be, again, a result of the complexity of the contract.

There is a negative linear relationship between the PALT and the CPARS ratings for tradeoff acquisitions, at -0.2594, indicating that as the PALT increases the CPARS ratings for quality and business relationships decrease. There could be multiple causes for this pattern. A longer PALT is indicative of a potentially lengthy resultant contract. A long contract term with negative ratings could be indicative of an increasingly stressful work environment, or drawn-out contentious disputing over deliverables. Longer contract terms offer more chances for the government COR to witness positive, but also negative, aspects of the contractor’s performance, leading to negative performance reviews. The CPARS reports would need to be reviewed in depth to find answers for this relationship.

## G. SUMMARY

This section discussed the data analysis and statistical findings that resulted from this study, and the statistical methods and assumptions employed to calculate and these results. A number of post-hoc analyses were employed to further understand the data. These additional analyses revealed positive and negative correlational relationships between covariate and outcome variables. The next and final chapter of this study discusses the conclusions and recommendations based on these findings.

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## **V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS**

The purpose of this chapter is to summarize the concepts and findings from this study. This chapter will discuss the managerial implications of the results found in Chapter IV, answer the research questions posited at the beginning of this study, and make recommendations for future research. This study only scratches the surface of best value application in the Army, and has ultimately raised more questions for future research.

### **A. SUMMARY**

The goal of this project was to determine whether or not there is a relationship in U.S. Army contracts between the method of procurement (LPTA or tradeoff) and the quality of the contract outcomes, in this case measured by evaluation of CPARS reports and PALT. This goal was met, to a degree, given the challenges of limited data and influence of other factors on statistical significance. Further experimentation is necessary to determine if the results of this experiment are applicable across the Army and the DOD.

Source selection methodologies along the best value continuum are used extensively in defense contracting, but the extent to which acquisition personnel understand how to appropriately use best value may be limited. While GAO reports show that most high-cost defense acquisitions are utilizing best value, there is indication that non-cost evaluation factors are not being used to their full potential. If requirements are well-written and there is low risk for contract performance, then LPTA is often the best process. If the government has prioritized non-cost factors to be equal to or greater than the cost in terms of important, or is seeking innovative solutions, then tradeoff is typically the best process. Non-cost factors can be monetized when necessary, and by doing so the risk for a protest based on subjectivity can be mitigated. By monetizing even non-cost factors there is room to justify an acquisition decision, thereby putting fears of protest at ease. The government acquisition team must be honest and thorough when developing the requirements and priorities of an acquisition. Determining priorities of cost and non-

cost factors on the best value continuum are the lynchpin to a successful evaluation. All parties should be cognizant of the pressures to make a timely award, reducing costs, reducing risks, limited resources, as all are factors that can very much inhibit a successful evaluation and make all efforts to disallow their encumbrance on the evaluation.

Government and industry have conflicting perceptions of best value, how it is used and what it offers. While government views best value as a means to get the most for a dollar, industry realizes that best value, when improperly used, often results in conflicting information during negotiations, “low-cost, low-quality,” or instances in which cost becomes a “negligible” factor in evaluations (Biddle, 1993, p. 128). The DOD has made strides with Better Buying Power and other efforts to reform best value contracting, but industry continues to find areas for improvement in the contract management process. While efforts have been made to bridge this conflict, all can agree that if the principles of best value are improperly applied that the results can be disastrous for private industry and for the taxpayer.

There is a lingering need for acquisition education in the DOD workforce. DAU has made marked improvement on acquisition education, but theoretical information is only so helpful; on-the-job training is valued by many to be the most valuable source of obtaining acquisition education, particularly for source selections. With the increasing defense mission and dwindling resources of time, money and people, however, there just is not enough guidance to assist the workforce in achieving source selection enlightenment. The Better Buying Power mantra of “do more without more” has been pushed beyond doing more with fewer dollars into performing more acquisitions with fewer manpower resources. The lack of resources is also resulting in a shift to using LPTA more often than tradeoff purely because LPTA requires fewer resources to accomplish the same mission. As more stress is put on the acquisition process, there is higher risk for making poor business decisions. If the best value processes are used appropriately and with proper intent, the government has the highest chance to receive the best value for the taxpayer dollars. This study therefore aims to determine whether there is a likelihood for better contract performance outcome using a particular evaluation process. The goal is to provide the acquisition workforce with better expectations for

post-award performance, so that it may be considered when choosing the most appropriate source selection process.

Post-award evaluation to build past performance is the often forgotten but increasing crucial phase of contracting. Once the contract has been awarded there is little concern for how the performance will be evaluated or what happens to that information. For years the evaluation factors had been unclear and contractor performance reviews used factors that were vague, and the reports were ultimately not appropriately filed due to a mismanaged system with no oversight or direction. After GAO investigations, the CPARS and PPIRS systems were finally put on track and government agencies have made strides in proper reporting techniques. Performance information is valuable for future acquisitions for the same reasons as other non-cost factors—the reliability of the information provides prized data that can mean the difference for reducing risk for future contractor poor performance. If past performance information is weighted as more important than cost, then a tradeoff evaluation would rely wholly on the quality of that past performance information, at which time it would be helpful if the information captured in CPARS was not only present but also reliable. As substantial projects, such as the SSIP test program, depend more heavily on accurate and reliable CPARS reporting, there is likelihood that this data could become more trustworthy over time.

The confirmed statistical relationships between the choice of source selection methodology and contract outcomes was inconclusive given the design of this experiment. More data is needed to confirm beyond refute that there is a relationship between the choice of utilizing either LPTA or tradeoff and the quality of the contract outcomes. The discovery of relationships between other factors (contract value and individual CPARS ratings) was an unexpected benefit from this study. There appears to be strong relationships between PALT and contract value for varying degrees across both contract methodologies, as previously discussed. Further research is necessary to evaluate the influence of these factors by or on the choice of methodology, if any.

Management in the world of contracting never seems to have enough time to perform what needs to be done to maintain fair, ethical and responsible contracting. One recommendation from this study is to, where manageable, factor in more time during pre-

award to allow for more use of tradeoff methods. LPTA is a means of awarding contracts faster, with little negotiating on non-cost factors, but without this approach there is no telling what innovations are being left on the table. Management can also benefit from this study inasmuch that there is a necessity to document the pre-award and post-award activities related to contract development and performance. In order for academia to determine if there is a relationship between actions and outcomes in the world of contracting, there must be enough real-world data that can be analyzed. At this time, for the variables evaluated in this study, data was not available to confirm without a doubt that a pattern exists. Management should examine where gaps in the data exist and try to bridge those gaps to ensure benefit from future research.

## **B. CONCLUSIONS**

The results of this study indicate that the only area where the choice of source selection methodology (LPTA or tradeoff) produced significantly different contracting outcomes was in the case of the contractor's CPARS cost rating, where the cost rating was worse for tradeoff contracts. More data and a larger sample is needed to confirm this notion.

There appears to be a strong positive relationship between tradeoff acquisitions and PALT and contract value and PALT. Length of contract preparation is clearly impacted to a degree by factors other than just the choice of source selection methodology. Contract complexity and dollar value are likely to have an impact on the length of time required to put a contract into place.

There appears to be a strong negative relationship between the CPARS ratings and PALT, suggesting that the CPARS ratings decline as the PALT (number of days) increases. This may be the result of an increased chance of contractor negative performance the longer it takes for a contract to be put into place, possibly due to a breakdown in communication or complexity of the contract.

There is only a moderately positive linear relationship between PALT and CPARS ratings for LPTA acquisitions, indicating that for acquisitions with a longer PALT time, the CPARS rating may be better. This may be the result of better efforts

being applied to the contract setup leading to better contractor performance overall. There is also a negative linear relationship between the contract value and the CPARS ratings for the LPTA acquisitions, suggesting that as the dollar value of the contract increases, there is higher risk for more criticism of the deliverables, therefore might be a better fit for tradeoff methodology over LPTA. There is a strong positive linear relationship between PALT and contract value for LPTA acquisitions, which is possible related to the complexity of the contract—the higher the dollar value on the contract, the more complex the contract, the longer the PALT.

For tradeoff acquisition there appears to be a negative relationship between the PALT and the CPARS ratings for tradeoff acquisitions, indicating that as the PALT increases the CPARS ratings for quality and business relationships are negative. This may indicate that even with excessive amounts of time dedicated to contract preparation (either due to diligent groundwork or redundant reviews) the CPARS ratings are not necessarily better. More time does not guarantee better reviews for the increase in time dedicated alone. Further analysis of the CPARS records is necessary, as well as management's oversight to ensure CPARS records are being created in accordance with policy. Finally, further research is needed to determine if the small sample size for this experiment is skewing the results and statistical relationships.

### **C. RESEARCH QUESTION ANSWERS**

In Chapter I of this paper, the following research questions were posited:

1. Does the utilization of LPTA or tradeoff have an impact on the outcome of competitively awarded contracts?
2. Are acquisition teams making knowledgeable decisions regarding which best value methodology is most appropriate for their source selection?

Question #1 was answered, to limited extent, with the sample size obtained. Based on the results of the statistical analysis with this small sample size, there is no firm, irrefutable relationship between the methodology choice of LPTA or Tradeoff and the contract outcomes. This study should be performed again with a larger sample size to study whether a relationship does, in fact, exist. The small sample size may have

precluded a MANCOVA and a proper ANCOVA, but the correlation tables (Table 3 in Chapter IV) point to relationships that are worth investigating.

Question #2 cannot be answered, given the lack of a clear relationship between the methodology and contract outcomes. There is no conclusive indicator for whether the acquisition teams are selecting the appropriate source selection methodology based on this limited data. Given that the sample had many more LPTA than tradeoff source selections, it seems that PEO EIS is selecting LPTA methods more frequently. Given also that the sample was comprised of larger dollar IT acquisitions, one would assume that tradeoff might be a better option for achieving best value for the government. This assumption also precludes a necessity for innovative solutions; if the requirement is relatively standard for this organization there may not be a desire for innovation, nor a willingness or necessity to consider non-price factors. LPTA is an appropriate choice for COTS purchases, which comprised the majority of the sample, therefore indicating that LPTA was appropriately used for this sample of contracts. Further review of pre-award decision-making documentation of a larger sample size could shed more light on the reasons the acquisition team chose LPTA more frequently than trade off. The sample of 19 contract actions was comprised of 14 LPTA actions and only five tradeoff actions, indicating that LPTA is being utilized more frequently than tradeoff. A larger, more diverse sample is necessary to get a better picture for how methodologies are selected for a wider range of acquisitions.

#### **D. MANAGERIAL IMPLICATIONS AND RECOMMENDATIONS**

The choice of source selection methodology does appear to have some impact on contract outcomes. Managers should stress the importance of this decision with acquisition teams entering the source selection phase of the procurement, urging the team to consider the choices carefully. The choice of course selection strategy should benefit the requirement. More data is needed to pinpoint the precise effects of strategy on contract outcomes. While some DOD organizations specialize in purchasing bullets, tanks, or other tangible goods, all organizations at some point purchase IT, whether in the form of simple laptop purchases or more complex services. All organizations therefore should

have an interest in learning how to purchase IT in ways that garner the best value for the government. This study evaluated a single organization with an IT-purchasing profile (numerous COTS purchases), resulting in findings that can be applied to other organizations making similar purchases.

On-the-job training that supports diverse contracting experiences is crucial for developing acquisition professionals. LPTA was found to be utilized more often than tradeoff in this study as there is further utilization of orders against indefinite delivery indefinite quantity (IDIQ) contracts, General Services Administration (GSA) contract vehicles, and Blanket Purchase Agreements (BPAs), which utilize streamlined contracting in the form of orders to award requirements faster. Under IDIQs, GSA vehicles and BPA agreements the rates are typically pre-negotiated with the set of vendors, leaving little necessity for negotiation and tradeoff tactics. While tradeoff can be utilized as a source selection methodology, there could be a tendency to use LPTA instead of tradeoff to facilitate an easier evaluation. Increased use of these simplified order vehicles may be the result of inexperienced contracting professionals relying on pre-established vehicles to streamline acquisitions. There is no problem with utilizing established vehicles, other than the hindrance of experiencing successful tradeoff acquisitions. Managers should stress the importance of on-the-job training with diverse experiences to help personnel gain experience and confidence to explore non-simplified acquisitions where tradeoff tactics can be implemented successfully.

The documentation for simple COTS purchases is often abbreviated, since the collective files are likely stored together by the contracting officer, thereby creating a larger picture of the entire contract. As contracting officers change, or decentralized contracts are utilized by multiple contracting officers and organizations, the documentation can become murkier and less clear for someone reviewing the files without any context. The future of contract analysis relies on clear documentation and accessibility of contract files for review. A great challenge in this study was finding not only a sample that could accommodate the statistical equations, but merely finding complete contract files and CPARS reports. PEO EIS has experienced multiple contracting personnel support changes over time, which results in incomplete contract

files and incomplete CPARS reports. Management in other organizations can benefit from this study by creating clear regulations and internal guidance for storage of contract file documentation, particularly as contract change hands change over time. Proper file maintenance may seem an administrative concern, but as systems become more advanced and are able to process trends and statistical findings from file data, the potential for future findings is limitless.

#### **E. AREAS FOR FURTHER RESEARCH**

A constant challenge in this study was finding enough data to run proper statistical analyses. The initial goal was to have at least 14 cases of each source selection methodology. Only 19 cases were acquired. This was the result of incomplete or inaccessible CPARS reports, frequent use of sole source/limited source procurements, or inaccessible contract files. While useful knowledge was obtained from the scaled-down statistical analyses, there may be other patterns that would emerge from a larger sample size.

While PEO EIS is a large IT organization with a large mission in the Army, PEO EIS is only one organization in the DOD. There are many benefits associated with replicating this research in other agencies with similar and with different purchasing organizations. The sample for this research contained mostly COTS hardware purchases. A sample of service contracts that tend to utilize tradeoff strategies more heavily may show very different results. More analysis is necessary to find trends that span the entire purchasing profile of the DOD.

Contract documentation in both pre-award and post-award is an administrative function that necessitates detail, objectivity and dedication. The contract manager (either contracting officer or COR) is responsible for ensuring that the contract file contains all necessary data for review and analysis. The challenge for this research was not only gaining access to the contract files and CPARS records (made even more challenging by the changing of hands between contracting agencies over the past five years of PEO EIS' contracting history), but ensuring that the pieces of the files necessary for data extraction were complete and present. Incomplete CPARS reports, incomplete contract files, and



inaccessible contract files and CPARS records were major hurdles experienced during data collection.

This study examined a limited number of contract outcomes and only one covariate. There may be other means of measuring contract outcomes, such as earned value management (EVM). As stated earlier, this effort can only be fulfilled if the contract documentation is detailed enough to support a sample that provides all such data.

While the goal of this study may not have been entirely achieved, headway was made in the field of best value contracting. Acquisition teams need to be prepared to handle the unforeseen challenges of the acquisition environment and be prepared with skills to procure using not only LPTA but also tradeoff strategies, and be knowledgeable of the implications of choosing one method over another. In order to achieve value, the playing field must be set up to accommodate that achievement; the DOD needs to be training acquisition teams to handle varying degrees of methodologies and exercise strong business judgment to gain the benefits of innovation where possible. To harken back to Warren Buffett's words, "Price is what you pay; value is what you get" (Buffett, 2008, p. 5). In order for the DOD to get the value it is due, acquisition teams need to be equipped with the best knowledge regarding implications of their choices. This study has begun to explore the impact of methodology on contractual outcomes and has only scratched the surface of what the world of best value contracting has to offer.

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## LIST OF REFERENCES

- About FPDS-NG. (n.d.). Retrieved from [https://www.fpds.gov/fpdsng\\_cms/index.php/en/](https://www.fpds.gov/fpdsng_cms/index.php/en/)
- About PEO EIS. (n.d.) Retrieved from <http://www.eis.army.mil/>
- Biddle, S. (1993, May 25). Statement of Stephanie Biddle on behalf of the Computer & Communications Industry Association Relative to the Federal Acquisition Improvement Act of 1993. Presented before the Subcommittee on Legislation and National Security of the Committee on Government Operations, U.S. House of Representatives, Washington, DC. Retrieved from <https://archive.org/stream/federalacquisiti00unit#page/120/mode/2up/search/Biddle>
- Branch, E. (2014). *Superior Supplier Incentive Program*. [Memorandum]. Retrieved from [www.ndia.org](http://www.ndia.org)
- Buffett, W. (2008). Berkshire's corporate performance vs. the S&P 500. Retrieved from [www.berkshirehathaway.com/letters/2008ltr.pdf](http://www.berkshirehathaway.com/letters/2008ltr.pdf)
- Calisti, R. S. (2015). Lowest price technically acceptable: Why all the debate? *Defense Acquisition Technology & Logistics Magazine*, 73. Retrieved from <http://dau.dodlive.mil/2015/03/01/lowest-price-technically-acceptable-why-all-the-debate/>
- Carter, Ashton. (2010). *Better Buying Power: mandate for restoring affordability and productivity in defense spending*. [Memorandum].
- Clark, C.S. (2014). Pentagon ranks top suppliers to spark competition amongst contractors. Retrieved from <http://www.govexec.com/contracting/2014/06/pentagon-ranks-top-suppliers-spark-competition-among-contractors/86473/>
- Cox, J. (2015, January 5). Finding a bargain for government buyers shouldn't be a crime. Retrieved from <http://www.govexec.com/contracting/2015/01/finding-bargain-government-buyers-shouldnt-be-crime/102105/>
- Dattalo, P. (2013). *Analysis of multiple dependent variables*. [Google Books version]. Retrieved from <https://books.google.com>
- Federal Acquisition Improvement Act of 1993. Pub. L. No. 103-545 Parts I and II (1993). Retrieved from [http://archive.org/stream/federalacquisiti00unit/federalacquisiti00unit\\_djvu.txt](http://archive.org/stream/federalacquisiti00unit/federalacquisiti00unit_djvu.txt)
- Federal Acquisition Regulations, 48 C.F.R. § 1 (2014).

- Gore, L. (2013). Army Contracting Command's National Capital Region center cases its colors. *AL.com*. Retrieved from [http://www.al.com/business/index.ssf/2013/07/army\\_contracting\\_commands\\_nati.html](http://www.al.com/business/index.ssf/2013/07/army_contracting_commands_nati.html)
- Government Accountability Office. (2009). *Better Performance Information Needed to Support Agency Award Decisions* (GAO-09-374). Washington, DC: Author. Retrieved from <http://www.gao.gov/new.items/d09374.pdf>
- Government Accountability Office. (2010). *Enhanced Training Could Strengthen DOD's Best Value Tradeoff Decisions* (GAO-11-8). Washington, DC: Author. Retrieved from <http://www.gao.gov/products/GAO-11-8>
- Government Accountability Office. (2012). *Observations on DOD's efforts to plan for civilian workforce requirements* (GAO-12-962T). Washington, DC: Author. Retrieved from <http://www.gao.gov/products/GAO-12-962T>
- Government Accountability Office. (2013). *DOD Actions to Improve the Reporting of Past Performance Information* (GAO-13-589). Washington, DC: Author. Retrieved from <http://www.gao.gov/products/GAO-13-589>
- Government Accountability Office. (2014a). *Contractor Performance: Actions Taken to Improve Reporting of Past Performance Information* (GAO-14-707). Washington, DC: Author. Retrieved from <http://www.gao.gov/products/GAO-14-707>
- Government Accountability Office. (2014b). *Factors DOD Considers When Choosing Best Value Processes Are Consistent with Guidance for Selected Acquisitions* (GAO-14-584). Washington, DC: Author. Retrieved from <http://www.gao.gov/products/GAO-14-584>
- Graham, R. (2007). Improving source selections. *Contract Management*. Retrieved from <http://www.ncmahq.org/>
- Guidance for the Contractor Performance Assessment Reporting System (CPARS). (2014). Retrieved from <https://www.cpars.gov/>
- Kendall, F. (2015a). *Appropriate use of lowest priced technically acceptable source selection process and associated contract type*. [Memorandum].
- Kendall, F. (2015b). Getting best value for the warfighter and the taxpayer. *Defense AT&L Magazine*, (March–April): 2–5.
- Kendall, F. (2015c). *Implementation Directive for Better Buying Power 3.0—Achieving dominant capabilities through technical excellence and innovation*. [Memorandum].

- Lohfeld, B. (2012). Will low-price contracting make us all losers? Retrieved from <http://washingtontechnology.com/articles/2012/06/04/lohfeld-low-price-technically-acceptable.aspx>
- Lohfeld, B. (2015) Is DOD moving away from LPTA? Retrieved from <http://washingtontechnology.com/articles/2015/04/07/insights-lohfeld-end-of-lpta.aspx>
- Magnuson, S. (2014). Executive slams “lowest price, technically acceptable” acquisition regimes. *National Defense Magazine*. Retrieved from <http://www.nationaldefensemagazine.org/blog/Lists/Posts/Post.aspx?ID=1383>
- Meeks, A. (2011). The Buck Stops...Where? Post-award accountability for large service contracts. *Contract Management*. Retrieved from <http://www.ncmahq.org/>
- Mission statement. (n.d.). Retrieved from [www.army.mil/asaalt](http://www.army.mil/asaalt)
- Office of Federal Procurement Policy (2009). *Improving the use of contractor performance information*. [Memorandum].
- Rendon R. G. & Garrett, G. A. (2005). Managing Contracts in Turbulent Times. *Contract Management*. Retrieved from <http://www.calhoun.nps.edu>
- VCE mission and vision statements. (n.d.) Retrieved from [https://www.fpds.gov/fpdsng\\_cms/index.php/en/](https://www.fpds.gov/fpdsng_cms/index.php/en/)

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