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Analysis of Lean Six Sigma in the Army Contracting Process

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ANALYSIS OF LEAN SIX SIGMA IN THE ARMY CONTRACTING PROCESS

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LIST OF ACRONYMS AND ABBREVIATIONS

AC	Acquisition Center
ACA	Army Acquisition Agency
ACAT	Acquisition Category
ACC	Army Contracting Command
ACSW	Advanced Crew Served Weapon
ARP	Acquisition Requirements Package
AT&L	Acquisition Technology and Logistics
BMA	Business Mission Area
BOE	Basis of Estimate
BRAC	Base Realignment and Closure
BT	Business Transformation
BTA	Business Transformation Agency
BTD	Business Transformation Directorate
CDRL	Contract Data Requirements List
CECOM	Communications-Electronics Command
CFR	Code of Federal Regulations
CMO	Chief Management Officer
CPI	Continuing Process Improvements
CPI	Continuous Process Improvement
DBO	Directorate of Business Operations
DBSMC	Defense Business Systems Management Committee
DCMO	Deputy Chief Management Officer
DMAIC	Define-Measure-Analyze-Improve-Control
DoD	Department of Defense
EIEMA	Information Environment Mission Area
FAR	Federal Acquisition Regulation
FASA	Federal Acquisition Streamling Act
FORSCOM	U.S. Army Forces Command
GAO	General Accountability Office
GIG	Global Information Grid

IMCOM-Pacific	Pacific Region of Installation Management Command
IT	Internet Technology
J&A	Justification and Approval
JIT	Just-in-time
JJV	Javelin Joint Venture
JLTV	Joint Tactical Vehicle
KPPs	Key Performance Parameters
LSS	Lean Six Sigma
MACOMs	Major Commands
NDAA	National Defense Authorization Act
NPS	Naval Postgraduate School
OA&D	Organizational Analysis and Design
OBT	Office of Business Transformation
OFPP	Office of Federal Procurement Policy
OMB	Office of Management and Budget
PALT	Procurement Acquisition Lead Time
PARC	Principal Assistant Responsible for Contracting
RDECOM	Research, Development and Engineering Command
SOP	Standard Operating Procedure
SOW	Statement of Work
TACOM LCMC	Tank Automotive and Armaments Life Cycle Management Command
TQM	Total Quality Management
UAS	Unmanned Aircraft Systems
UCC	Uniform Commercial Code
USA/CMO	Under Secretary of the Army/Chief Management Officer
WMA	Warfighter Mission Area

I. INTRODUCTION

A. PURPOSE

This MBA Project will explore the contracting process, specifically the United States Army process, to see just how efficient and effective it really is.

To achieve the goal of this MBA Project, the first topic for discussion will be on the vision and mission of the DoD as it pertains to Business Transformation. Next, it will address how this transformation is being implemented in contracting through the use of Continuing Process Improvements (CPI) and, more specifically, through the use of Lean Six Sigma (LSS); the Army's premier CPI. This project will discuss LSS projects that have been completed using Power Steering, a LSS project database, and assess the effectiveness of these projects. Finally, recommendations will be devised based on a survey released to the contracting workforce. The results of the survey will indicate the awareness and effectiveness of LSS as a tool to implement Business Transformation in Contracting.

B. SCOPE AND LIMITATIONS

The scope of this project focuses on Lean Six Sigma (LSS) as it pertains to the Contracting Process. To assess the impact of LSS, this project evaluates contracting centers at Aberdeen Proving Ground, Maryland; Fort Belvoir, Virginia; Fort Huachuca, Arizona; and Fort Monmouth, New Jersey. Time and funding has precluded this research team from assessing a larger sample.

Significant areas of research include history, process, knowledge base, training, and years of experience. Power Steering is a database of LSS projects that have been completed, many of which used LSS in contracting as their basis. The results of these projects indicate that LSS is making an impact in the Contracting Process, and the survey will provide a generic overall analysis of their success. Time and funding has precluded this research team from conducting a more detailed analysis.

The workforce is extremely inexperienced and their knowledge of LSS may be based primarily on this fact. Also, in 2005, Fort Monmouth was placed on the Base Realignment and Closure (BRAC) list, which has caused a depleted workforce. Finally, over the past five years, significant numbers of retirements have depleted the workforce, which has weakened the sample.

Finally, online surveys, by nature, are plagued by negative attitudes toward the survey process and there is a lack of time available for response. While the survey is limited in length to encourage maximum participation and significant, honest responses, the results of the project are limited in this respect.

C. SIGNIFICANCE

With limited guidelines for the implementation LSS in Contracting, this study aims to educate the workforce on the strengths of LSS and other Management Processes. This project will provide an assessment of LSS knowledge in contracting and evaluate if it is actually working. The Army has determined that LSS is the premier tool to increase efficiency and effectiveness but this project will determine if this is a viable fit for Contracting. The results of this project can be complied to make the case that LSS is not currently the premier tool for efficiency and effectiveness in contracting, however certain aspects of LSS are applicable. The recommendations of this project indicate that components of LSS can be combined with other Management Processes to develop a successful tool to transform contracting into an efficient process.

D. BENEFITS OF THE STUDY

The recommendations of this project indicate that components of LSS can be combined with other Management Processes to develop a successful tool to transform contracting into an efficient process.

E. PROJECT ORGANIZATION

Chapter I is an introduction to the purpose of this project as well as the significance of the research. The scope provides parameters of the research and conveys any limitations in the research. Concluding the chapter are the research questions this study explores.

Chapter II provides a literature review including the background of Lean Six Sigma. History and how LSS developed as the Army's premier Continuing Process Improvement (CPI) are articulated. The vision of both the Department of Defense (DoD) and the Army are explained in this chapter since understanding this helps to set the stage for the dilemma the workforce is faced with today.

Chapter III discusses the research methods employed for this project as well as the goals of the online survey. A discussion of the survey design and the scoring used to analyze the surveys follows. The chapter concludes with an explanation of survey subjects along with any limitations of the survey.

Chapter IV provides an explanation of survey participation, results of the survey, and an overall analysis. The survey was conducted to fully understand the impact of LSS in the contracting process. Without the survey, it was impossible to determine if the effectiveness of LSS was being realized. Senior leadership within the Army may have the impression that LSS is working, but that is because they are viewing the situation from a higher level. With Power Steering projects suggesting that this is practical and possible, they would continue to believe this had this research not been conducted. After reviewing the results of the survey however, this impression may change.

Chapter V contains an overall summary including the results of the research provided by the literature review and survey responses. A recommendation to combine the strengths of LSS with other Management Processes creating a hybrid solution applicable directly to the Contracting Process finalizes the project.

F. RESEARCH QUESTIONS

This project report addresses the following four research questions:

1. Has LSS been an effective tool for implementing Business Transformation within contracting processes?
2. How does LSS help facilitate process improvements for contracting?
3. What improvements, if any, are necessary to improve LSS?
4. What are the relative advantages and disadvantages of LSS within contracting?

II. LITERATURE REVIEW

A. BACKGROUND

The following paragraphs provide history on the Army's vision of Lean Six Sigma to explain how it developed its impression of what Lean Six Sigma is today.

1. Introduction

The Abrams Tank, the F-22, the USS Intrepid, the Javelin Assault weapon, the ATACMS Missile System. These are all complicated state of the art weapons systems that possess some of the most sophisticated technologies in the world. The Department of Defense (DoD) has many more weapons systems like these that work to defend our freedoms. With these sophisticated technologies comes a demand for business operations that can assure the best companies are working on these systems and that the United States remains on the forefront of technology. Such luxuries cost a lot of money and consume many resources, much of which the United States has grown short of. The DoD has long had a pressing need to become more proficient at the way it handles its business, and at the heart of this is the contracting process. A complicated and lengthy process in itself, the contracting process has to maintain the same kind of efficiency and effectiveness as the weapons systems that it supports, but can it?

2. Department of Defense Approach to Business Transformation

The DoD is a massive organization, is more than twice that of the world's largest corporation, has more personnel than the populations of a third of the world's countries, and provides medical care for as many patients as the largest health management organization. (DoD Steward for Progress, p. 1) Constant visibility, scrutiny, and involvement from the media combined with high expectations from the Constitutional power granted to citizens, make for tremendous pressures. Transforming something like business operations in an organization such as the DoD is no easy task and it is even more challenging given the current lack of efficiency and effectiveness. There are no excuses when it comes to the DoD, and even if they had a viable excuse for failure,

nobody wants to hear it. The DoD has built and maintained a reputation for always getting it right, for being an unstoppable force, and for having the best personnel.

Transformation, or change, is not easy for any organization; especially not to this magnitude. As an example of the difficulty of widespread change, think back to when online banking was first introduced. Marketing campaigns were launched across the region, countless hours were expended, and billions of dollars were spent to assure consumers that this was a service that could revolutionize the banking industry. Many instantly rejected this idea as insanely risky and something that could cause more harm than good. People simply could not trust that their finances were managed via Internet and even worse, a wireless connection. The point is that eventually people changed, and now many depend on this form of banking.

The same philosophy is applied in the case of Business Transformation across the DoD. Historically, procurement professionals performed their duties in a delicate, methodical and heavily conservative manner. Today, unnecessary and low-value added processes and document requirements are a significant drag on acquisition productivity and must be aggressively identified and eliminated (Carter Memo p. 3). Unlike online banking, where it is optional to change the way finances were done, Business Transformation within the DoD is mandatory.

When President George W. Bush signed the E-Government Act on 17 December 2002, it forever changed the way business would be done. (www.whitehouse.gov/omb/e-gov/) This Act was not optional, and it did not provide policy for those that did not want to comply. In part, the Act states, "The use of computers and the Internet is rapidly transforming societal interactions and the relationships among citizens, private businesses, and the Government." It also states, "Electronic Government is a critical element in the management of Government, to be implemented as part of a management framework that also addresses finance, procurement, human capital, and other challenges to improve the performance of Government" (USC Sec. 3601). These words do not give the impression that this is something that the Government needs to start to work on over time, but rather something that is imperative to implement now.

Building upon the Clinger-Cohen Act, the E-Government Act serves as the primary legislative vehicle to guide evolving federal Internet Technology (IT) management practices and to promote initiatives to make government information and services available online. In doing so, it also represents a continuation of efforts to realize greater efficiencies and reduce redundancies through improved intergovernmental coordination, and by aligning IT investments. (Reauthorization of the E-Government Act) This change sets the United States up to continue to be the superpower of the world now and for years to come.

Business Transformation starts with the Global Information Grid (GIG), which was put into action as a result of the Clinger-Cohen Act of 1996. Basically, the GIG is interwoven network of information capable of connecting warfighters, policy makers and support personnel across the globe so they can collect, process, store, distribute and manage information in real-time. The GIG includes owned and leased communications and computing systems and services, software (including applications), data, security services, other associated services, and National Security Systems. (DAU ACQuipedia) To enable and improve the GIG, the DoD developed four primary mission categories: the Warfighter Mission Area (WMA), Business Mission Area (BMA), National Intelligence Mission Area, and the Enterprise Information Environment Mission Area (EIEMA). This next discussion will focus on the BMA.

The Defense Business Systems Management Committee (DBSMC) was a result of the National Defense Authorization Act (NDAA) for FY2005. Section 332 of the FY2005 NDAA requires DBSMC to certify and approve any business system modernization (excess of $1 million) in an attempt to rein in the escalating cost of business systems and divert needed funds to war fighting missions. The FY2005 NDAA designated the DBSMC as the principal agent responsible for DoD Business Transformation; specifically the BMA (GAO Case 09–586).

The DBSMC was chartered by the DoD in February 2005 to oversee transformation in the BMA and ensure that the needs and priorities of the Warfighter are met. The DBSMC is the senior-most governing body overseeing Business Mission Area

transformation. (BTA website) Comprised of the Deputy Secretary of Defense (Chair); Under Secretary of Defense for Acquisition, Technology, and Logistics (Vice Chair); Secretaries of the Military Departments and the heads of the Defense Agencies; Under Secretary of Defense (Comptroller); Under Secretary of Defense for Personnel and Readiness; Vice Chairman of the Joint Chiefs of Staff; Commander, U.S. Transportation Command; Commander, U.S. Joint Forces Command; Assistant Secretary of Defense for Networks and Information Integration/DoD Chief Information Officer; and Director, Program Analysis and Evaluation (Advisory), the DBSMC meets monthly and is directed by the Deputy Secretary of Defense (Secretary of Defense Memorandum).

To summarize, the BMA component of the GIG is protected and managed by the DBSMC but how good of a job are they doing? Oversight and Surveillance is one of the biggest hot buttons for the DoD to deal with in modern contracting. With an ever increasing outsourced workload, assuring that the proper guidance and consequences are in place to make operations run as efficiently and effectively as planned. Since the DoD has issues with oversight and accountability in multiple elements of its processes, unfortunately the same remains true as the DBSMC tries to monitor the BMA. This sets a trend that resonates all the way down the organization chain to those that implement Business Transformation at the operational level.

The General Accountability Office (GAO) pointed this out in 2006. The GAO maintains a list of areas that have been identified as high risk either because of their greater vulnerabilities to fraud, waste, abuse, and mismanagement, the need for the broad-based transformation to address the area, or because of its importance in accomplishing a piece of the President's Management Agenda. The Department of Defense is wholly responsible for nine of these high risk areas and reports regularly to the GAO and the Office of Management and Budget on the progress of remediating these areas. The DoD Approach to Business Transformation is one of those high risks (ExpectMore.gov).

In response to this the DoD took several corrective actions to free themselves from these troubles. One of which was the creation of the Deputy Chief Management

Officer (DCMO). The Office of Management and Budget (OMB) and the GAO take a vested interest in how the DoD is operated. In certain instances, as in the case of the 2008 NDAA and Independent Management Reviews (Status of DoD Implementation; www.gao.gov) for example, the GAO is directly tasked with policing the DoD and reporting on their progress. This is quite possibly due to the nature of the DoD mission or simply due to its magnitude. In November 2006, the GAO suggested installing a full-time professional and empowering this person with the authority for exactly such oversight; thus a Chief Management Officer (CMO) was born. This CMO would orchestrate a united front to prioritize transformation efforts and achieve a common goal (Implementing Chief Operating Officer; www.gao.gov).

In May 2007, the Secretary of Defense used his discretionary authority and appointed the Deputy Secretary to fill the role as this CMO and Congress codified this in Section 904 of the FY 2008 NDAA. Section 904 also created the Under Secretary of Defense level position of DCMO as described above to assist the DoD CMO.

Another frontier to develop Business Transformation within the DoD was led by the efforts of the Business Transformation Agency (BTA), which was established by the Deputy Secretary of Defense in October 2005. Since its inception, the BTA has been striving to coordinate all BMA Business Transformation activities across DoD, but on August 9th, 2010, the BTA was terminated. At the time it closed, the BTA employed 360 people and it was spending approximately $340M each year. The BTA's mission has been distributed with the majority of its responsibilities designated to the DCMO discussed above (www.examiner.com). The BTA did have an impact however as each military agency across DoD; i.e., Army, Navy, Air Force, mimicked its basic structure when developing their own plans for Business Transformation.

Business Transformation, in and of itself, is an ongoing project not only for the DoD, but also for the military agencies that are carrying out this mission. Perhaps mimicking the DoD structure in each agency is a way to standardize the method of implementation? A recent restructure of the Army's Business Transformation website

(www.armyobt.army.mil) was necessary due to this shift in strategy and again provides evidence that changing something as big as business practices is an exhausting task.

3. Army Approach to Business Transformation

Within the Army's Business Transformation Strategy, the Office of Business Transformation's Business Transformation Directorate (BTD) is responsible for developing and implementing a Business Transformation Plan and a Business Systems Architecture and Transition Plan. Together, these plans guide and constrain implementation of interoperable defense business system solutions as required by the 2009 NDAA and guide the Army's information technology (IT) investment management to align with strategic business capabilities as required by law. (www.armyobt.army.mil) Through the Army's Business Transformation initiatives, the Army must align the generating force and business operations to support the agility and versatility of our operating force. The first step towards addressing this profound change and the mandate to improve business operations is the development of the Army's Business Transformation Plan and establishment of the Office of Business Transformation (OBT).

The OBT Directorate of Business Operations (DBO) serves as the entity through which the Under Secretary of the Army/ Chief Management Officer (USA/CMO) manages, coordinates, oversees and synchronizes the generating force's business operations, processes and decision-making procedures. The DBO is primarily responsible for the implementation and management of Business Transformation including developing policies and regulations pertaining to Business Transformation to ensure that business operations are fully synchronized across the four core enterprises.

The Army's strategy for Business Transformation focuses on Business Process Reengineering Reviews, Leveraging Commercial Planning Solutions, Promoting Common Terminology, and Utilizing the Results of Lean Six Sigma efforts (www.armyobt.army.mil) The Army mimics the DoD structure for Business Transformation to align with the DoD, Joint Staff, and sister services. Customers are the

main focus with motivation driving from the bottom-up. The goal is a continuous improvement in business operations through alignment, integration, and innovation:

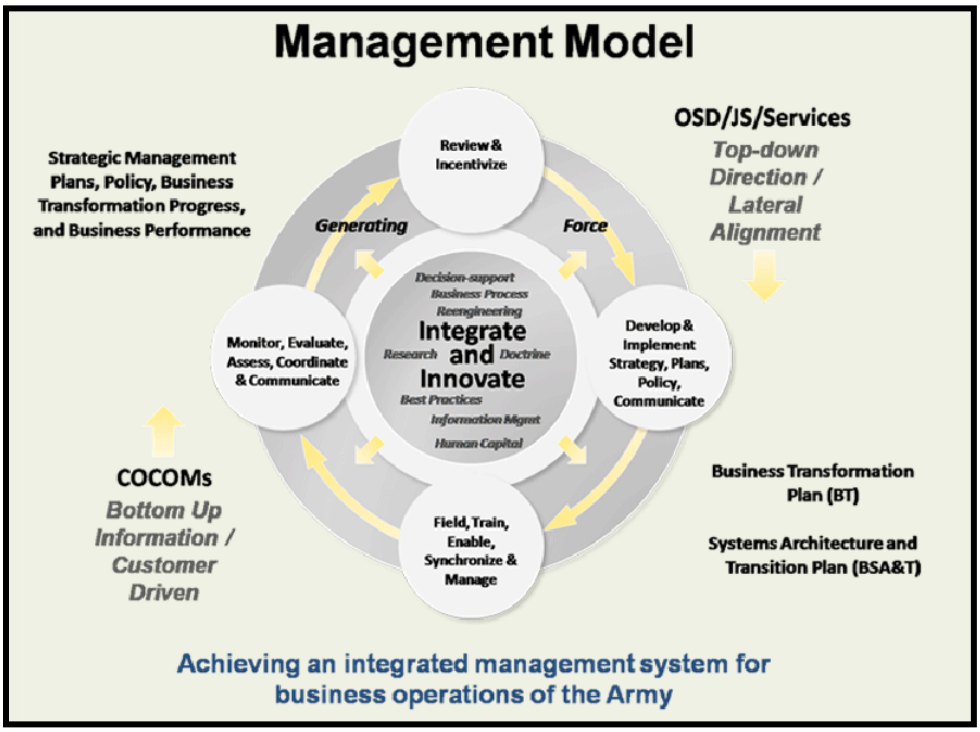

Figure 1. Army Business Transformation Management Model

According to the 2011 Army Business Transformation Plan, there are four steps to implementing Army Business Transformation:

Step 1: Plan for Business Success

Step 2: Implement the Plan

Step 3: Assess Business Progress

Step 4: Adjust for Continuous Improvement

An important point is that Step 3 touches on the use of the Capability Maturity Model and Lean Six Sigma, while Step 4 touches on Continuous Process Improvements. Clearly these are common threads throughout the DoD and Army, but how are they being implemented in Contracting?

The Plan states, “Lean Six Sigma is the Army’s tool of choice to increase quality, efficiency, and effectiveness while reducing cycle time and variance. Since 2006, we have completed 5,287 projects generating significant financial and operational benefits. There are an additional 1,909 projects are under way. In 2009, the Army submitted $96.6M worth of projects in an Office of Management and Budget inquiry to support President Obama’s $100 million cabinet-wide savings The Army’s accomplishments received nation-wide coverage and attention. As a result of adapting our institution to think, act, and operate in an enterprise approach, leaders will continue to make resource informed decisions that achieve Readiness at Best Value versus Readiness at Any Cost.” (http://blogs.govexec.com) Given all of the successes mentioned above and considering the reach of the contacting process, one might conclude that several of these projects were based on the contracting process. Interestingly, Step 4 explains the importance of Leadership and Culture Change. Leaders should be able to see the patterns of performance and understand with a new perspective the trends and shifts that they may not have known existed previously. The culture of the Army is diverse, and a mindset must shift from “Readiness at any cost” to performance-based and outcome-focused.

This necessary shift in mentality is rooted in the Army Posture Statement, specifically when it speaks of transformation and modernization (Army Posture Statement). The Army Business Transformation Vision describes how the Army in the future applies proven business principles to the Army’s business problems, and achieves efficiencies. The means to achieve those efficiencies are embedded in the Business Transformation Strategic Framework. The three focus areas and five enablers that comprise the framework are formed of the best practices and methods of American enterprise, and will provide the boundaries, structure, and standards to help ensure our success.

The Army is taking a holistic approach to Business Transformation (BT) as depicted in the Strategic Framework. (Addendum M, Army Business Transformation website) BT is being approached from a combination of three focus areas: Continuous Process Improvement (CPI); Organizational Analysis and Design (OA&D); and

Situational Awareness. Implementing all of this was no easy task, and it certainly would not happen without its fair share of challenges. In 2005, GAO added Business Transformation to its list of High Risk topics (Successful Business Transformation; www.gao.gov) The primary reason for being added to the list is the lack of adequate management accountability and the absence of a strategic and integrated action plan for the overall Business Transformation effort. Unless DoD makes progress in its overall Business Transformation, other areas marked by GAO cannot be fixed (DoD Approach to Business Transformation; www.gao.gov) To tackle this problem, the Army embraced Continuous Process Improvements (CPI). CPI is a strategic approach for developing a culture of continuous improvement in the areas of reliability, process cycle times, costs in terms of less total resource consumption, quality, and productivity. Deployed effectively, it increases quality and productivity, while reducing waste and cycle time. The Army has embarked upon one of the largest enterprise-wide deployments of Lean Six Sigma (LSS) in an effort to institutionalize the tenets of CPI, a component of Business Transformation. LSS combines the principles of Lean (reducing and eliminating non-value activities) with Six Sigma (reducing variation, increasing quality) to improve process effectiveness and alignment with the voice of the customer. The question is … will this work for a complex process such as government contracting?

4. Introduction to the Contracting Process

Today more than ever, the government must ensure that it spends money wisely and eliminates waste and abuse of taxpayer dollars. With more than one out of every six dollars of Federal government spending going to contractors, it is imperative that contract actions result in the best value for the taxpayer.

The Office of Federal Procurement Policy (OFPP) in the Office of Management and Budget plays a central role in shaping the policies and practices federal agencies use to acquire the goods and services they need to carry out their responsibilities. OFPP was established by Congress in 1974 to provide overall direction for government-wide procurement policies, regulations and procedures and to promote economy, efficiency,

and effectiveness in acquisition processes. OFPP is headed by an Administrator who is appointed by the President and confirmed by the Senate (Office of Federal Procurement Policy).

In March 2009, the President directed agencies to become more fiscally responsible in their contract actions and to take immediate steps to achieve real and sustainable improvements.

To facilitate immediate improvement following the issuance of the President's March 2009 Memorandum, OMB last year directed each agency to develop an acquisition savings plan. This approach was built on the premise that every agency can and must immediately operate in a more cost-effective manner and reduce inefficiencies and waste from its practices and programs. At the same time, this approach recognizes that each agency has a unique mission with different acquisition requirements, as well as strengths and weaknesses, and therefore needs to tailor actions that best serve its specific circumstances.

Agencies are using a combination of strategies to achieve savings. In some cases, agencies are ending procurements that do not meet program goals or that support projects that are no longer needed. In other cases, they are increasing use of acquisition practices that have been shown to drive costs down and improve the quality of performance. Agency plans identify specific savings initiatives as well as the difference between what would have been spent in the absence of the savings initiative and what the agency expects to spend as a result of pursuing the initiative.

A capable and appropriately sized workforce is a critical element in supporting better acquisition outcomes and improved government performance. To realize savings and reduce contract risks, our contracting and program offices must understand the marketplace and work collaboratively to clearly describe the government's requirements in a way that can generate robust competition.

Unfortunately, the lack of capacity and capability within our workforce to meet these demands has hampered our ability to manage contract risk and control contract costs for much of the past decade (Executive Office of the President, Office of Management and Budget, July 2010).

Between FY2000 and FY2008, acquisition spending by civilian agencies expanded by 56 percent, from $80 billion to $138 billion (in inflation-adjusted dollars). Over this same time period, the number of contract specialists (GS-1102s) grew by only 24 percent from 7,995 to 9,921. In contrast, both acquisition spending and the number of contract specialist in civilian agencies were little changed during the previous decade (Executive Office of the President, October 2009).

This lack of capacity has caused harm at every step of the acquisition process, from poor definitions of the government's requirements, to unjustified sole-source contracting and poorly run competitions, to failure to adequately oversee the contractor and ensure that it delivers what it committed to, in terms of cost, schedule, and performance.

To reverse this trend, the President, in his FY 2011 Budget, requested that Congress appropriate $158 million for the civilian agencies' acquisition workforce. This small investment will have a high return as our contracting officials improve their capacity and capability to save resources and reduce risk from the hundreds of billions that are spent on contracts every year (Executive Office of the President, Office of Management and Budget, July 2010.)

The lack of the Acquisition Workforce is not only directed to the Contiguous United States (CONUS) agencies but also is a concern throughout Outside of Contiguous United States (OCONUS). As stated in the Gansler Commission Report (2007), the Secretary of the Army established an independent Commission on Army Acquisition and Program Management in Expeditionary Operations to review the lessons learned in recent operations and provide forward-looking recommendations to ensure that future military operations achieve greater effectiveness, efficiency, and transparency. The Commission assessed process (including internal controls), personnel, organization,

training, policy and regulation, as well as explored legislative solutions, to ensure that the Army is properly equipped for future expeditionary operations. The "Operational Army" is expeditionary and on a war footing, but does not yet fully recognize the impact of contractors in expeditionary operations and on mission success, as evidenced by poor requirements definition. The Commission found that the following critical segments of the "Institutional Army" have not adapted in order to enable responsive acquisitions and sustainment for expeditionary operations.

Specifically:

- Financial management
- Civilian and military personnel
- Contracting and contract management
- Training and education
- Doctrine, regulations, and processes

These key failures encumber the Army acquisition system's performance and have significantly contributed to the waste, fraud, and abuse in-theater by Army personnel.

The Commission found that:

- The expeditionary environment requires more trained and experienced military officers and non-commissioned officers (NCOs). Yet, only 3 percent of Army contracting personnel are active duty military and there are no longer any Army contracting career

  General Officer (GO) positions.
- The Army's acquisition workforce is not adequately staffed, trained, structured, or empowered to meet the Army needs of the 21st Century deployed warfighters. Only 56 percent of the military officers and 53 percent of the civilians in the contracting career field are certified for their current positions.
- Notwithstanding a seven-fold workload increase and greater complexity of contracting, the Institutional Army is not supporting this key capability.

- Notwithstanding there being almost as many contractor personnel in the Kuwait/Iraq/Afghanistan Theater as there are U.S. military, the Operational Army does not yet recognize the impact of contracting and contractors in expeditionary operations and on mission success.
- What should be a core competence contracting (from requirements definition, through contract management, to contract closeout) is treated as an operational and institutional side issue.

The biggest change from peacetime acquisition operations in the continental United States (CONUS) or long established bases outside the continental United States (OCONUS)to acquisitions in support of expeditionary operations is the accelerated operations tempo. In an expeditionary environment, the requirements must be filled in days, not months, and the volume of requirements can quickly overwhelm a small contracting organization. Operation Iraqi Freedom was not the first military action in recent times where the Army had to deploy on an expeditionary mission. In the preceding decade the Army was deployed to Haiti, Bosnia, and Kosovo. Yet, from the perspective of those that were there on the ground at the outset and those that followed, there were no operational plans for providing acquisition support to the warfighter in theater. In other words, the expeditionary experiences in Haiti, Bosnia, and Kosovo had not been leveraged into building an operational or institutional capability to support the next expeditionary military operation.

A key issue that quickly manifested itself in Iraq is the critical need for focused contracting personnel tailored to support expeditionary military operations and clear, concise, well understood expeditionary contracting rules. It should come as no surprise that expecting an inexperienced contracting officer to learn how to adapt and implement exceptions to the Federal Acquisition Regulation (FAR) and/or the Defense Federal Acquisition Regulation Supplement (DFARS) in a high pressure environment with demanding time critical priorities will result in mistakes, adverse actions, and ultimately delays.

Timely and efficient contracting for materiel, supplies, and services in support of expeditionary operations, and the subsequent management of those contracts, are and will be a key component of our achieving success in future military operations. Contracting is the nexus between our warfighters' requirements and the contractors that fulfill those requirements whether for food service, interpreters, communications operations, equipment repair, new or modified equipment, or other supplies and services indispensable to warfighting operations. In support of critical military operations, contractor personnel must provide timely services and equipment to the warfighter; and the Army contracting community must acquire those services and equipment effectively, efficiently, and legally; while operating in a dangerous, fast-paced environment.

Army contracting personnel face over a 600 percent increase in workload, while performing more complex actions than ever before (for sophisticated services and buying systems-of systems). Yet, the number of Army civilian and military in the contracting workforce is stagnant or declining. Experienced military contracting personnel are essential for the success of expeditionary operations. Uniformed contracting experts provide the Army with professionals who have served in combat branches and easily understand the Army organizational structure. However, only three percent of Army contracting personnel are military. The number and expertise of the military contracting professionals must be significantly increased in order to fill this void. Experienced civilian contracting personnel are also essential for expeditionary operations. Any corrective actions addressing the shortage of military personnel must also address civilian personnel. The Commission found Army civil servants to be an extremely dedicated and competent group; however, they are currently being managed by personnel policies that are both out-of-date and irrelevant to the Army mission and challenges of today, especially those of expeditionary operations.

The Commission Report suggests a significant number of recommended changes to improve Army acquisition and program management in expeditionary operations. The Commission makes four overarching recommendations to ensure the success of future expeditionary operations:

- Increase the stature, quantity, and career development of military and civilian contracting personnel.
- Restructure organization and restore responsibility to facilitate contracting and contract management in expeditionary and CONUS operations.
- Provide training and tools for overall contracting activities in expeditionary operations.
- Obtain legislative, regulatory, and policy assistance to enable contracting effectiveness in expeditionary operations.

The Commission believes that the identified problems will not be solved by accomplishing any list of corrective actions, no matter how thoughtful, thorough, and extensive the list, unless this is also accompanied by a significant change in the organization of the Army with regard to the contracting community, and the acquisition community within which the contracting function lies. In fact, while this Commission, other commissions, task forces, and auditors look at the current contracting issues and bring fresh eyes to the problems, the Commission believes that all attempted remedies will be temporary unless the Army returns to basic organizational and Army leadership principles. Despite the increasing importance of the acquisition process to the Army's performance, the Army apparently has not valued the skill and experience required to perform those processes. Numerous attempts over the last 20 years, both legislative and organizational, to modify that value culture have not succeeded (Gansler Commission Report, Report of the "Commission on Army Acquisition and Program Management in Expeditionary Operations").

The scarcity of skilled contracting specialists can be traced to the government's decision to downsize the federal workforce in the 1990s, which led to skill set gaps and had adverse consequences when Operation Enduring Freedom and Operation Iraqi Freedom commenced, said Edward Harrington, Deputy Assistant Secretary of the Army for Procurement.

"Over the years of downsizing, the majority of those folks that left our service were mid- and senior-level, seasoned, experienced contracting professionals," Harrington said. "The last eight years...we've had a tremendous increase in workload" (Army News Service, 2010).

One major impact specific to DoD government contracting professionals is the Base Realignment and Closure (BRAC). The BRAC commissions are formed with an eye toward membership from independent high-level experts to provide sound, unbiased recommendations. The commission provides its results in the form of a Report to the President of the United States recommending DoD base closures and realignments. These recommendations potentially impact a significant number of active military and DoD civilian personnel. The current commission delivered its final report to the president on September 8, 2005, listing its recommendations for revamping the U.S. military's infrastructure and force structure (Acquisition workforce challenge--motivation for government vs. industry employment).

The DoD is aggressively transforming its institutional acquisition processes and systems to align with 21st century national security and defense objectives. Every aspect of how we do business is being assessed and streamlined to deliver improved capabilities to the Nation's warfighters and visibility to our executive leadership. To that end with "The Will to Change," we have been transforming enterprise-wide acquisition processes, systems, and management structures to achieve a more integrated, cohesive environment (Defense Acquisition Transformation Report to Congress).

Albert Einstein once said "We cannot solve our problems with the same thinking we used when we created them." Secretary of Defense, Donald H. Rumsfeld provided implementing guidelines for strategic planning in the *National Defense Strategy of the United States of America*. He states: "We will continually adapt how we approach and confront challenges, conduct business, and work with others." The Secretary's purpose for continuous transformation is to extend key advantages while reducing vulnerabilities. Secretary Rumsfeld highlighted the need to change longstanding business processes within the Department of Defense taking advantage of information technology. He seeks

to foster a Defense Department culture of innovation while transforming our business applications, requiring leaders to continually adapt their approach to the challenge of supporting a globally deployed Warfighter. To meet this challenge for transformation the Secretary of the Army established the first Executive Director for Institutional Army Transformation. The Office of the Executive Director for Institutional Army Transformation in conjunction with the Deputy Chief of Staff G8, PAED, is responsible for the institutionalization of Lean Six Sigma (L6s) as a methodology for transforming the Army (How the Army Should use Lean Six Sigma as a Transformation Strategy for Logistics in the 21st Century).

In 1993, the Government Performance and Results Act was passed to move Government agencies away from managing activities and direct them toward methods that produce results. It provided the acquisition community with a vision that states their goal as being "to deliver on a timely basis the best value product or service to the customer while maintaining the public's trust and fulfilling policy objectives" (FAR 15). Soon to follow was the Federal Acquisition Streamlining Act (FASA) passed in 1994. FASA's ultimate goal was to make the acquisition process more responsive to the needs of the final customer, the Warfighter.

In addition to legislative measures designed to streamline the process, the Government acquisition community began searching for methods to reduce its Procurement Acquisition Lead-Time, or PALT. PALT is generally defined in terms of cycle time, the length of time it takes an acquisition specialist to put an identified requirement on contract. The cycle time standard begins upon receipt of an acceptable Acquisition Requirements Package (ARP) that is substantially complete, and provides adequate information required to initiate preparation of the solicitation (Change 5 to Communication-Electronics Command (CECOM) Acquisition Center (AC) Policy Alert No. 06–95, 1). To accomplish the goal of reducing lead-time, contracting commands engaged in continuous improvement techniques designed to decrease PALT while maintaining the integrity of established contracting procedures.

One such method utilized was Total Quality Management (TQM). At the CECOM Acquisition Center, Fort Monmouth, NJ, the application of W. Edwards Deming's TQM principles was successful in reducing PALT from an average of 180 days (for a competitive, negotiated procurement) at the onset of the program to the current 120 days. TQM was a good first step; however, a new push toward further PALT reductions is required in order to meet the demanding needs of an ever more mobile Warfighter. This must be accomplished while keeping contracting methods as free from non-value added processes as possible. To accomplish this goal, Government contracting must further embrace continuous improvement techniques; specifically, it must continue to use the successful techniques of TQM, while adding the practices of Six Sigma and Lean Thinking to the toolboxes of its employees (The Reduction of Procurement Lead Time Through the Use of Continuous Improvement Techniques, Doelling, Gilmartin, Kalapacs).

5. Introduction to Management Processes

a. Lean Six Sigma

Lean Six Sigma has been gaining stamina over the past couple years as the Army implements its Business Transformation efforts. The Office of the Executive Director for Institutional Army Transformation in conjunction with the Deputy Chief of Staff G8, PAED is responsible for the institutionalization of Lean Six Sigma as a methodology for transforming the Army. The Army was looking for the right qualitative management tool to transform the Army Staff and in its major Commands (MACOMS). What the Army was hoping to achieve with its transformation strategy was a successful business process that would stream line business processes and eliminate waste while reducing variation and redundancy.

Michael A. Kirby, Deputy Under Secretary of the Army for Business Transformation, said there was a compelling need to do business differently. The Army is "a highly efficient, ultra-modern 21st century war-fighting machine," he said, "but…our business practices are mired in mid-20th century practices" (Lean Six Sigma is in the

Army Now, Improving Efficiency). Lean Six Sigma is a main focus in the Army's transformation efforts. Lean Six Sigma has gained massive momentum in the last few years as the government is looking to improve its business practices and eliminate waste. The goal of the Lean Six Sigma deployment, which includes civilians and contractors as well as active duty, Army Reserve and National Guard personnel, is to "make the business side of the Army as efficient as the war-fighting side is effective," according to Ronald E. Rezek, special assistant to the Acting Secretary of the Army. The Army has realized that when it comes to business practices they can relate to the private sector minus the bureaucracy. The Army is looking more and more to the private sector in order to improve their business processes. They are taking the same approach as purchasing commercial equipment it is easier to purchase equipment off the shelf that has been proven than redeveloping the wheel and increasing costs.

The Army's plan in implementing Business Transformation and eventually LSS stemmed from the NDAA implemented in Fiscal Year 2005, which directed DoD to develop and modernize all business systems. As mandated in the 2009 Duncan Hunter NDAA, the Secretary of the Army, acting thought the Chief Management Officer is responsible for carrying out an initiative for the business transformation of the Army. The objectives of the Business Transformation initiative are the 1) development of a comprehensive Business Transformation plan to achieve an Integrated Management System for Army business operations; 2) development of well defined enterprise-wide business systems architecture and transition plan encompassing end-to-end business processes and capable of providing accurately and timely information in support of Army business decisions; and 3) implementation of the Business Transformation plan and business systems architecture and transition plan (Business Transformation Plan 2011 p. 4). The Army is striving to improve upon business practices and process when the U.S. economy is striving to recover from Operation Iraqi Freedom and the economic recession. This sense of urgency has thrust Business Transformation into the forefront of the Army's key initiatives.

The Army is taking a harder look at its business processes and has implemented an Army Business Transformation vision in order to stay in line with its objectives. The Army Business Transformation vision is: A Generating Force that better supports the agile and versatile Operating Force to produce Readiness at Best Value. The Business Transformation vision is framed around four critical management priorities:

- Develop and implement an Integrated Management System
- Align, integrate and innovate enterprise-wide processes
- Transform business operations
- Adjust culture.

The cornerstone of the Army Business Transformation vision is the accomplishment of our singular goal to achieve an Integrated Management System that is performance based and outcome focused to enable cost-informed decisions and trade-offs for successful management of the Army's business operations (Business Transformation Plan 2011, p. 7). In order for the Army's vision and goal to work, the Army is relying on strong leadership and a full Army team effort including military and civilian in working together and bringing about cultural change.

Within the Army's business processes, they are increasing productivity and performance by analyzing and improving the areas of reliability, process cycle times, costs in terms of less total resource consumption, quality, and productivity (Business Transformation Plan 2011, p. 7). The Army is focusing on business processes to achieve its vision stating that processes are assets of an organization, much like people, facilities, equipment and information. Our management and solid understanding of our processes will pay off in terms of organizational performance. They are the organizing framework, that is, the guide for all other components (Business Transformation Plan 2011, p. 11).

Lean Six Sigma is a business management strategy originally developed by Motorola and implemented to be used in the private sector. Lean Six Sigma seeks to improve the quality of process outputs by identifying and removing the causes of defects (errors) and minimizing variability in manufacturing and business processes. It uses a set

of quality management and statistical methods, and creates a special infrastructure of people within the organization who are experts in the methods (Business Transformation Plan 2011, p. 11). In 2009, the Army submitted 96.6M worth of projects in an Office of Management and Budget inquiry to support President Obama's $100 million savings goal (Business Transformation Plan 2011, p. 12). Lean and Six Sigma have often been considered rivals. Lean advocates believe that Six Sigma neglects anything related to flow and speed while Six Sigma advocates believe that Lean fails to note customer needs and variation. Both quality and speed are required in order to achieve a balanced process that allows organizations to improve service quality, determined by the customer, within a certain time constraint.

b. Lean Six Sigma Process

Define-Measure-Analyze-Improve-Control (DMAIC) is a Lean Six Sigma structured problem-solving methodology that is used for process improvements. These phases are meant to guide a team logically from defining a problem all the way through implementing a solution, and establishing best practices in order for solutions to be standardized. DMAIC is used to encourage creative thinking within boundaries such as keeping the basic structure, process or service. DMAIC process can be applied to any situation where a process is producing measurable results. Following DMAIC requires a lot of focus since it is extremely time consuming and costly, and no organization has the capacity to measure everything.

The Define phase focuses on selecting high impact projects, and understanding which metrics will implement project success. Define also establishes the scope, goals, and financial and performance targets for the project. Define is a critical step in framing a project. It is critical in establishing a framework and defining the scope of a project. How Define is structured will determine the success of your project. The measure phase will help determine the current process, the way the process is measured, and its baseline performance. The main goal in measure is to collect reliable data on process speed, quality, and costs that will be further analyzed to identify the causes of problems. The measure phase allows individuals to become familiar with the current

process and map each step within the process allowing it full visibility through a value stream map. Within the Analyze phase the root causes are being identified and weeded out from highest to lowest priority. Brainstorming is an additional tool used in this phase in order to come up with and identify potential causes. Once key root causes have been identified solutions can be developed. The Improve phase focuses on developing potential solutions and developing the new end state. Control and Improve allows the users to develop and implement pilot solutions and document implementation plans. The final steps focus on transitioning the new process back to the process owners, with training documents and instructions.

c. Lean Manufacturing

The basic concept behind Lean Manufacturing systems that have been practiced for many years in Japan are waste elimination, cost reduction and employee empowerment. Lean Manufacturing focuses on identifying and eliminating non-value added activities through continuous improvement of processes. Trough eliminating non-value added steps the process is being shortened and increasing in process speed. Mass production from the early 1900's began to be questioned as Japanese manufacturing companies established that "Just-In-Time" was a better model. The Japanese manufacturing concepts came to be known as lean production. Lean found its roots and principles within the Toyota manufacturing production system, and focused on increasing efficiency and reducing cycle time by the elimination of waste. Lean production was widely adopted by logistics, construction, the military, and the service industry. Lean began to be universally accepted and became a way of thinking and shifted the focus of the manufacturing engineer from individual machines and their utilization, to the flow of the product through the total process. The Lean process was further defined in the book *Lean Thinking* (1996), by James P. Womack and Daniel T. Jones, where they broke down lean principles even further to five:

- Specify the value desired by the customer
- Identify the value stream for each product providing that value and challenge all of the wasted steps (generally nine out of ten) currently necessary to provide it
- Make the product flow continuously through the remaining value-added steps
- Introduce pull between all steps where continuous flow is possible
- Manage toward perfection so that the number of steps and the amount of time and information needed to serve the customer continually falls

Lean thinking is to understand what value is and what activities and resources are absolutely necessary to create that value. Once this is determined everything else is considered waste. “Lean” focuses on abolishing or reducing wastes and on maximizing or fully utilizing activities that add value from the customer perspective. According to the customer perspective value is determined by what the customer is willing to pay for in a product or service. The elimination of waste is the primary objective of Lean Manufacturing.

People play an important role in Lean thinking and how they add value to an organization. The people doing the work are the center of Resources, Information, Process Design Authority, Decision Making Authority and Organizational energy. One of the key factors Lean focuses on is people who add value. Today’s organizational structure focuses on a team-oriented organization that is centered on the flow of value and not functional expertise.

d. Six Sigma

Six Sigma is a disciplined business management process that helps the Army focus on developing and delivering near-perfect products and services. Sigma is a statistical term that measures how far a given process deviates from perfection. The

theory behind Six Sigma is that if you can measure how many "defects" you have in a process, you can systematically figure out how to eliminate them and get as close to "zero defects" as possible. To achieve Sigs Sigma Quality, a process must produce no more than 3.4 defects per million opportunities. Six Sigma focuses on statistical methods, which are used in conjunction with specific steps in order to eliminate variability in manufacturing and business processes.

Six Sigma stems from strategic management and the intent of implementing objectives and goals. Six Sigma is a data-driven approach to improve the output process by targeting and removing causes for defects in a business model. It is sort of like quality control but much more detailed. By implementing a set of quality control methods and creating a set of skilled personnel to watch over and troubleshoot the process, Six Sigma seeks to reduce costs while improving production. Six Sigma managers tend to focus more on the financial benefits focusing on cost savings or revenue increases for success. It is used around the world and is regarded as one of the major systems for TQM (Total Quality Management).

e. TQM

Total Quality Management (TQM) is a business management strategy in which employees and management can work together to improve business processes in the production of goods and services. It is similar to Lean Six Sigma in that its goal is to increase business while reducing losses due to wasteful practices. TQM was developed in the 1950's and has increasingly become more popular since the early 1980's. Some of the companies who have implemented TQM include Ford Motor Company, Phillips Semiconductor, SGL Carbon, and Toyota Motor Company. TQM is a management philosophy that seeks to integrate all organizational functions to focus on meeting customer needs and organization objectives.

TQM views an organization as a group of processes. It focuses on incorporating the knowledge and experiences of workers in improving their business

practices. The simple objective of TQM is "Do the right things, right the first time, every time." The main principles of TQM are the following:

- Management Commitment
- Employee Empowerment
- Fact Based Decision Making
- Continuous Improvement
- Customer Focus

TQM focuses on continuous improvement in all work, from high level strategic planning and decision making, to detailed review of day to day practices. TQM focuses on eliminating mistakes and avoiding defects. A central theme to TQM is that mistakes can be made by people, but most of them are caused by defective systems. In order for TQM to be effective a certain level of stress must exist within the organization, people need to feel a reason for change. When a crisis exits a leader may intervene and strategically implement TQM within the organization.

B. MEASURING EFFICIENCY AND EFFECTIVENESS

1. Cycle Times and Reliability as Metrics

As stated in the Continuous Process Improvement (CPI) Transformation Guidebook, CPI provides organizations a method for analyzing how work is currently done and how processes can be improved to do the job more efficiently and effectively on an ongoing basis. There are many measures for gauging how well an organization is meeting the needs of its customers. Two important measures for meeting the Warfighters readiness needs are cycle time and reliability at affordable cost.

Cycle time refers to the amount of time required for the DoD component to accept a current or future customer demand and provide the requested capability. The objective is to align the organization and its processes to shorten the cycle time without adversely affecting the reliability and cost of the good or service. Cycle time improvement can be focused on any process to reduce the time and resources involved.

Reliability refers to the degree of certainty that a product or service of a process will perform as intended over a set period of time under specified conditions.

Cycle time and reliability almost always can be improved if money is no object. However, because no organization enjoys unlimited funding, CPI practitioners must consider the costs and benefits of process improvements before undertaking them. In DoD, CPI efforts should consider the anticipated improvement in the context of lowest total cost to deliver targeted required value to the customer within the entire consumption and provisioning value streams at multiple levels under study.

The need to streamline the DoD contracting process and reduce Procurement Acquisition Lead Time (PALT) was emphasized in the June 30, 1986 Packard Commission report. The report concluded "that the defense acquisition system has basic problems that must be corrected. These problems are deeply entrenched and have developed over several decades from an increasingly bureaucratic and over-regulated process. As a result, all too many of our weapon systems cost too much, takes too long to develop, and by the time they are fielded, incorporate obsolete technology." The prolonged time to meet users' requirements, caused by the inability to reduce PALT, "lowers customer satisfaction, costs more money, and is not responsive to the changing-threat environment." Non-responsiveness to the changing-threat environment may be the most important impact of prolonged PALT because the failure to meet the changing-threat environment may result in the failure to meet the military's most essential requirement of defending the nation (Kirzow/Sweeney, 2009).

2. Uses of Power Steering Projects

Many Army Installations have utilized the LSS project database Power-Steering. Power Steering projects have been completed and are currently being developed that show how LSS can be used in Contracting. According to these projects, the process can and should work. Unfortunately there is no follow-up on the part of the researchers to see if these projects actually DO work.

Power Steering Project Summary

1. **Title:** Improve the Joint Tactical Vehicle (JLTV) unclassified Contract Data Requirements List (CDRL) routing, review, and approval process

   Contracting Office: PEO CS&CSS, Tank Automotive and Armaments Life Cycle Management Command (TACOM LCMC)

   Project Problem: Routing, review, and approval of contract data deliverables is prone to inefficiencies, which can cause problems for the government project office and contractors

   Project Scope: Scope includes the unclassified CDRL routing, and acceptance process for all JLTV OEMs and assumes first pass approval. Scope does not include classified CDRLS, review time, elevated issue resolution and rework/resubmission loops

   Project Goal: The goal of this project is to improve the CDRL process cycle times by 50 percent or more and by addressing quality objectives (i.e., incorrect distribution statements, restrictive markings issues, incorrect routing)

2. **Title**: Improve Service Contract Approval Process

   Contracting Office: Pacific Region of Installation Management Command (IMCOM- Pacific)

   Project Problem: The Service Contract Approval was established by Department of Army to ensure we are contracting for necessary/essential services while responsibly managing our resources. However, this has not been achieved and the Service Contract Approval has created an additional layer of time delays

in the acquisition process. Current process to develop, validate, chart and approve contract requirements is inefficient. 30 percent of the Service Contract Approvals involve rework/questioning, which in turn slows down the approval process. Service Contract Approvals take anywhere from 4 - 56 days to approve.

Project Scope:

- Begin: Service Contract Approval is routed in the IMCOM-Pacific system.
- End: IMCOM-Pacific Regional Director approves Service Contract Approval
- In: PW are requirements
- Out: All other functional area requirements.

Project Goal: To reduce Service Contract Approval processing time to within 5 business days at the Region level.

3. **Title**: Streamlining Major Acquisition Statements of Work (SOW) over $10M

Contracting Office: PEO Missiles and Space Weapon Systems

Project Problem: The Drivers/Root Causes of the defects include:

- # Sources for Inputs
- # Repeated Inputs
- # Strategy/Policy Changes
- # User Changes on Specification
- # Conflicts w/other areas
- # Omitted Tasks
- Inaccurate data
- Agreement on Key Performance Parameters (KPPs)
- Delayed Management Decisions

Project Scope:

- Process Control Plan
- Communication Roadmap
- Implementation Plan
- Visual Process Control Tools
- Project Documentation Benefits

Project Goal: 50 percent Cost Avoidance or $196,000 per SOW, and improved Cycle Time from 180 days to 90 days

4. **Title**: Contract Review Process

Contracting Office: U.S. Army Forces Command (FORSCOM)

Project Problem: The SECARMY directive requires Senior Commander review of service contracts has resulted in commanders sending untimely requests typically entail less information than needed for FORSCOM decisions regarding approval. This results in an inordinate amount of time spent by FORSCOM Staff / Leaders in validation of Requirements, Costs and Period of Performance. Submitted requests typically display less than adequate Cost / Benefit Analyses that consider economies of scale and alternative sources of labor. A review of the entire process is required to standardize submission times and information submitted.

Project Scope:

- In Scope: Process from receipt of request until approved by FORSCOM DCG.
- Out of scope: Process prior to receipt into FORSCOM after approval/disapproval by DCG.

Project Goal: Reduce Contracting Process Lead Time (PLT) by 20 percent as measured by calendar days from receipt of request in HQ until rendering of recommendation to DCG, FORSCOM.

5. **Title**: Unmanned Aircraft Systems (UAS) Contracting Process Improvement

   Contracting Office: PM UAS

   Project Problem: Based on data collected from subject matter experts in July / 2007 the PM UAS contracting process, from a valid contracting requirement until the CRP development stage, takes about 250 days. Ideally the process should take less than 150 days.

   Currently there is no formal or structured process to collect data for this process. The new process should be set up in such a way that data (cycle time, man hours, and rework) can be collected from each step in the process.

   Project Scope: PM UAS has an inefficient contracting process that can be improved. The organization has no standardized contracting business process; therefore, each contract/mod 1095 is processed in a unique way. This causes delays in approvals, creates a back log of contracts, and results in unnecessary or redundant work. Once an improved contracting process is implemented, the organization should benefit in man hours saved by creating better work flow, visibility of where the contract is in the process and more effective contract execution.

   Project Goal: The primary goal of this process improvement is to create a more efficient way to process contract requirements. The team goal is to reduce the cycle time by 60 percent (from 250 days to 150 days and increase the quality by 50 percent.

6. **Title**: Request for Proposal Improvement Process

Contracting Office: PEO Missile and Space

Project Problem: Revisions to prior Javelin Joint Venture (JJV) Six Sigma process to incorporate Lean Six Sigma improved processes to ensure quality and timeliness of proposal submittals and improved communication. Currently, there is not a valid measurement system.

Project Scope: The key drivers of the process were no suspense on data call documents for CRP development, lack of communication within the project offices, Acquisition Center and contractors. By addressing these concerns, suspense dates will be required for CRP/FRAB documents, RFP checklist will be provided to contractor via Acquisition Center upon issuance of RFPs, to ensure a standard format to result in clearer communication between all.

Project Goal: To have detailed timelines for proposal process from CCWS Project Office, Acquisition Center and Contractor from initiation of requirements to contract award.

- Define clear requirements to team
- Contractor submit quality proposals

C. ANALYSIS OF MANAGEMENT PROCESSES

TQM and LSS are very similar in theory. They are both process improvement methods. TQM is considered a quality control approach, which coincides with the development, implementation, and continual control of different organizational systems that are used with a number of different processes. TQM focuses on organizational culture, it strives to have different departments communicating with each other, and working together so that they can all help improve processes and products. Six Sigma also focuses on improving quality in processes. However, Six Sigma takes it to a different level since it focuses on a statistical and data driven approach. Six Sigma analyzes and measures data in order to figure out where variations and defects can be reduced. Six

Sigma takes an integrated approach to quality improvement, focusing on improving the whole business instead of focusing on individual processes and operations within segregated departments.

Quality Management has gone through many different theories and tools in order to accomplish customer objectives and organizational goals. It seems as if every couple of years a new theory is introduced that becomes the new craze, or the new flavor of the month. Quality Management has been implemented many different ways through many different types of processes. As stated by John Faxe's fable, "The Blind Men and the Elephant," in which six blind men attempt, and ultimately fail, to describe how an elephant could actually be a good description of quality management. In this well-written story, each blind man touches only a part of the elephant. Each goes on to describe what the elephant feels like. For example: one blind man says "the elephant feels like a wall"; another blind man describes it as "the elephant feels like a snake." In much the same way as each blind man forms a vision of the whole by examining a part, promoters of quality management have written books and articles and presented seminars about different concepts, which either are about the parts or are visions of the whole drawn from the knowledge of one or a few parts (see Foley, 2004).

Concepts that have been presented and promoted are, for instance, total quality management (TQM), six sigma, lean manufacturing, business process re-engineering, just-in-time (JIT), Kaizen and Business Excellence. However, the description and definition of these different quality management concepts differ. For example, TQM is sometimes defined as a continuously evolving management system consisting of values, methodologies and tools, the aim of which is to increase external and internal customer satisfaction with a reduced amount of resources, see Hellsten and Klefsjo¨ (2000) (Similarities and differences between TQM, six sigma and lean p. 284). Six Sigma, on the other hand, is defined as a business process that allows companies to drastically improve their bottom line by designing and monitoring everyday business activities in ways that minimize waste and resources while increasing customer satisfaction by some of its proponents, see Magnussonet al. (2003). NIST (2000) defines lean as a systematic

approach to identifying and eliminating waste through continuous improvement, flowing the product at the pull of the customer in pursuit of perfection. (Similarities and differences between TQM, six sigma and Lean, p. 285) While the definitions of TQM, six sigma and lean differ, the aim of the different concepts seems to be similar; through improvements minimizing waste and resources while improving customer satisfaction and financial results. Is using Lean Six Sigma the best approach for the Army? Can a hybrid of these three concepts allow for a better return on investment to the Army?

The problem with TQM is that organizations have a hard time understanding what TQM means, what are the concepts organizations want to take away using TQM. TQM is a theory that lacks the structure for an organization to use as a tool for business improvement. TQM focuses on bringing different divisions together in order to brainstorm and communicate with each other about potential improvements; however it does not have a blueprint individuals can use in order to implement the improvements. Six Sigma comes in where TQM fails to achieve. Six Sigma focuses on the business aspects of how organizations are going to show results, such as cost savings, cost avoidance, and focuses on financial results. Six Sigma is the wheel that turns the TQM theory and sets continuous improvements in motion. Lean allows for organizations to realize their process flows and where waste can be eliminated.

As Michael Doelling stated, "To accomplish this goal, Government contracting must further embrace continuous improvement techniques; specifically, it must continue to use the successful techniques of TQM, while adding the practices of Six Sigma and Lean Thinking to the toolboxes of its employees." Six Sigma and Lean are the types of tools needed in order for organizations to implement process improvements. TQM is the catalyst that allows the joint problem solving and communicating between management and employees to occur in order for a joint solution to be implemented.

Lean Six Sigma was developed primarily for the manufacturing world. While Six Sigma was originally founded by Motorola, Lean was originally founded by Toyota. Both of these companies relied heavily on manufacturing in order to develop their products, and Lean Six Sigma was the tool used in order to reduce redundancy, variation, and

eliminate waste. When the services industry saw the improvements the manufacturing industry was able to make using LSS, they thought they could simply apply LSS to Services. However, managers of service organizations attempting to apply LSS often found it difficult to apply the Tools LSS had to offer to the Manufacturing industry to the Services industry.

Services generally do not have a one dimensional assembly line when it comes to providing a product. Services by their nature possess special characteristics, for example, the importance of information and the abundance of cross-functional process flows (Improving Service Delivery in Government with LSS, p. 6). Adding to the difficulty is government services entail additional dimensions and complexities then the public service industry. The government deals with an abundance of red tape, and regulations, political motives, union rules, and differing undocumented processes. The government, especially in contracting does not have one standard way of doing business. Within contracting, individuals are told to reference the FAR for the established procedures for every step in the procurement process however different organizations interpret the FAR different ways and each organization has its own separate requirements and ways of handling business and standards of operations.

Relating process improvements to performance measurement adds to the difficulty of implementing Lean Six Sigma within government organizations; and thus the ability to show financial benefits. Lean Six Sigma is a merger of two different processes, which might not be the best solution for every organization. As stated in Improving Service Delivery in Government with Lean Six Sigma "Performance measurement can and possibly should play a key role in an effect process improvement program. But process improvements are not a natural consequence of effective performance measurement" (p.11). Government agencies that interact with other departments find it difficult to measure financial benefits since the organization making the improvement might not be the department that recognizes the financial benefit. As stated in Improving Service Delivery in Government with Lean Six Sigma, "An important reason for this disconnect is that most service processes flow across

departments and it is difficult to attribute overall performance to any single department. For example, a finance department may experience complaints about the accuracy of bills, but the root cause of the inaccuracies could be found in another department that provides the finance department with billing-related information." (pg. 11) Using LSS within government organizations might not be as cut as dry as using it within the commercial sector, there are many factors to take into consideration before applying LSS to one aspect of government acquisition.

Government service organizations have similar characteristics and many of them would not be found in manufacturing. These characteristics include as stated by Improving Service Delivery in Government with Lean Six Sigma (p. 17) Importance of information

- Significant task variability
- Cross Functional process flows
- Many handoffs of information
- Numerous management or technical reviews
- Hidden benefits and costs
- No explicit motivation for urgency

These seven characteristics make it very difficult to implement Lean Six Sigma. Significant barriers exist that need to be recognized prior to initiating a Lean Six Sigma project. A significant amount of pre-work and research should take place in order to determine if implementing a LSS project is beneficial to the process and not simply financially beneficial to the organization. Information within the acquisition community is not readily available, due to confidentiality agreements and data right agreements. Prior to initiating a project research should be done if the information is measurable, available, complete and understandable. Realizing the process may cross different organizations also needs to be considered when beginning to focus on a process improvement. Different departments have different management, different goals and objectives, competing incentives and also hold many rivalries. A process that spans many departments might also have different terminologies or methodologies on

completing the same task from a previous department. This may cause added mistakes and miscommunication between departments.

Also, improving a process that crosses many departments usually means additional review processes that need to take place within departments before moving on to a different department impeding service completion. Coming across employee residence also may cause delay in improving the process since employees may be unmotivated or lack the urgency the organization is trying to achieve with the process improvement. A cultural shift would need to take place in order for employees to become aware of the overall process and not focus solely on their own. Employees tend to have tunnel vision when it comes to their immediate functions and tasks, they fail to realize the bigger picture and how their work functions could contribute to the overall process improvement.

In order for Lean Six Sigma to be beneficial within Services organizations all these characteristics need to be realized prior to initiating a project and need to be resolved or carefully examined prior to implementation of the project. The project team that is developed needs to have representatives who represent all the departments the process touches. Realizing early on if the improvement needs to focus on cycle time, or if needs to focus on quality, will allow the team to target its energy specifically on where the problem lies and save valuable time.

Lean Six Sigma is a tool that the public sector entities can implement but only if the challenges to implementation are well understood. Employees at all levels need to be committed and involved in implementing process improvements, and leadership needs to realize not to exclude any employee but that each employee needs to benefit from LSS. “The implementation of LSS is squarely placed on leadership there needs to be real understanding of the requirements for success and there needs to be real commitment to making the changes necessary to achieve transformation” (Improving Service Delivery in Government with Lean Six Sigma p. 32). Lean Six Sigma can support the ongoing

changes in government if utilized in the proper way. Organizations and departments as whole must be committed to the cultural transformations that are need for Lean Six Sigma to take hold.

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III. RESEARCH METHODS

This chapter contains the research methods employed for this project as well as the goals of the online survey. A discussion of the survey design and the scoring used to analyze the surveys follows. The chapter concludes with an explanation of survey subjects along with any limitations of the survey.

A. SURVEY GOALS

This research is designed to collect and analyze the perceptions of the contracting workforce within different contracting commands. In order to collect these perceptions, an online survey was released to over 500 contracting professionals. Each participant was allotted three (3) weeks to complete and return the online survey for analysis. The survey process allowed the researchers to analyze results in order to make recommendations for the future use of Lean Six Sigma within the Contracting process. One survey was designed to gather responses from all contracting commands.

B. SURVEY DESIGN

The survey focuses on answering the following research questions:

- Has LSS been an effective tool for implementing Business Transformation within contracting processes?
- How does LSS help facilitate process improvements for contracting?
- What improvements, if any, are necessary to improve LSS?
- What are the relative advantages & disadvantages of LSS within contracting?

A confidential and anonymous survey was distributed to over 500 employees within the contracting career field. The survey did not contain identification criteria other than to which group a participant belonged. The survey was approved by the CECOM Principal Assistant Responsible for Contracting (PARC), Mr. Edward Elgart, Ms. Suzanne Anderson, Associate Director Contracting Operations MICC Center – Fort Dix, and the NPS Institutional Review Board. It was administered electronically, via Survey

Monkey©, during the time period of March 28, 2011, to April 15, 2011. A survey was chosen as the most effective and efficient way to gather anonymous data about each group. The information below provides an explanation of the questions chosen for the survey. An analysis of survey results will be discussed in the next chapter.

The survey included a total of 50 questions developed by the researchers. The survey designed and used for this study is located in the Appendix of this study. The survey contained a combination of multiple choice, Likert-scale questions, and open ended questions. Questions 1 through 8 included questions related to the individual survey taker; i.e., questions related to their career experience, knowledge of LSS, LSS experience, and workplace situation. Questions 9 through 22 25 specifically asked about the impact of LSS within the commands. Opinion based questions were deliberately put in place to see if common trends appeared. Trends like an unawareness of the capability that LSS has, training weakness, etc. Questions 26 through 35 inquired about the usefulness of the metrics in place to measure efficiency and effectiveness. Survey participants were asked how they felt about what they were being evaluated with and what processes they felt needed the most work. Questions throughout the survey were accompanied by open-ended sections. If the participant answered yes or no, they were often asked to explain why.

C. SURVEY PARTICIPANTS

Survey respondents were all Contracting Personnel consisting of CECOM and MICC Center Contracting Officers, Contracting Specialists, Procurement Analysts, and Pricing Analysts. Neither Program Offices nor Contractors were asked to participate as the sample was aimed directly as contracting professionals. Respondents were each provided an e-mail link to the survey. The PARC and MICC Center Associate Director endorsed the survey, which promoted participation.

Approximately 60 percent of people polled had between 1 and 5 years of experience. On average, participants reported having 10 years of work experience, with 26 percent of participants having 20+ years of experience. There is a big gap of experience between 5 and 20 years of experience.

Participants in this survey have a variety of responsibilities within their commands. Approximately 26.2 percent are interns, 51.5 percent are Non-Supervisory, and 23.3 percent are Supervisory.

We did not exclude the 14.7 percent of the workforce with no awareness of LSS because we felt that this was an important statistic to capture. An inexperienced workforce still holds valuable information on the implementation and application of LSS and therefore must be captured in the results of our survey. We also did not exclude the 81 people that skipped question 6 because they had never used LSS.

D. SURVEY LIMITATIONS

The survey by nature relies on a self-reporting method of data collection. Intentional deception, poor memory, or misunderstanding of the questions can all contribute to inaccuracies in the data. The survey is limited in that the perceptions and opinions expressed are not the official opinions of CECOM or any associated organization. The results of the survey are a generalization of the organization and are not agency policy.

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IV. RESULTS AND ANALYSIS OF RESEARCH

A. SURVEY PARTICIPATION

The researchers utilized the online software program, Survey Monkey©, to create the survey listed in the Appendix. A total of 535 potential survey participants composed of CECOM (Aberdeen Proving Ground, MD; Fort Belvior, VA; Fort Huachuca, AZ) and Fort Dix, NJ Division chiefs, Branch Chiefs, Contracting officers, Contracting Specialists, Procurement Analysts, and Pricing Analysts were contacted by e-mail to complete the online survey. Of the 535 total potential participants, 103 completed the survey for an overall response rate of 19.25 percent. The percentage is an indication of the lack of use of LSS in CECOM and the MICC Center.

B. RESULTS OF SURVEY

The following section reveals the results of the LSS in Contracting survey provided to the participants. The following questions are presented in bar graph format.

1. Has LSS been an effective tool for implementing Business Transformation within contracting processes?

2. How does LSS help facilitate process improvements for contracting?

3. What improvements, if any, are necessary to improve LSS?

4. What are the relative advantages & disadvantages of LSS within contracting?

Research question #1 was asked to determine the effectiveness of LSS in facilitating Business Transformation within Contracting. Judging from the results of the survey, LSS may be an efficient tool for accomplishing this, but it is not currently effective. While it appears that LSS is the preferred method of choice when it comes to the Army's Continuous Process Improvements, our survey produced a different result. As shown in Table 1, 87.2 percent of participants are aware of what LSS is, which initially seemed like a promising result, but, as shown in Table 2, only 28.6 percent have

it promoted within their command. The Army is fully dedicated to making LSS the primary CPI but statistics like this paint another picture.

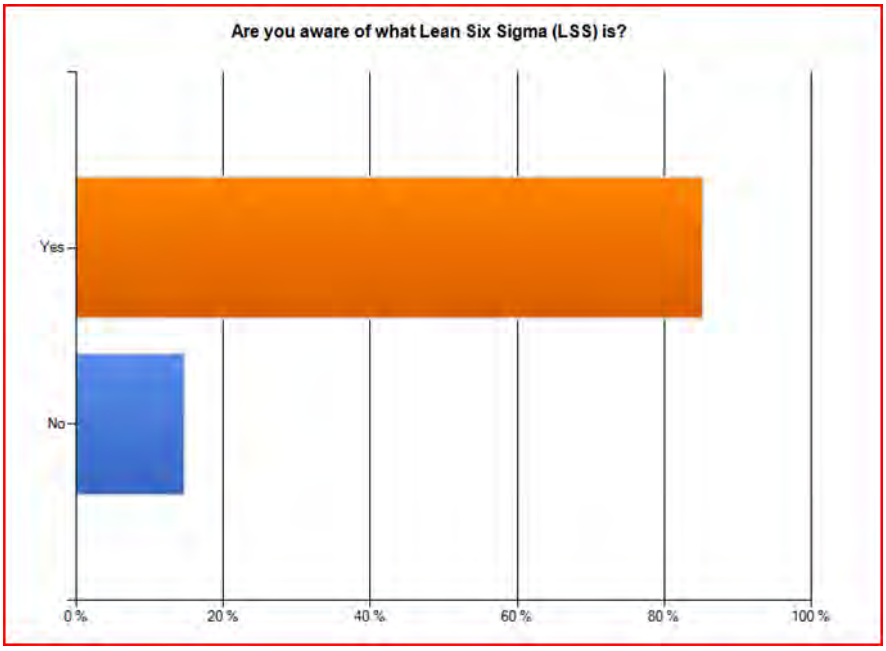


Table 1. Awareness of LSS

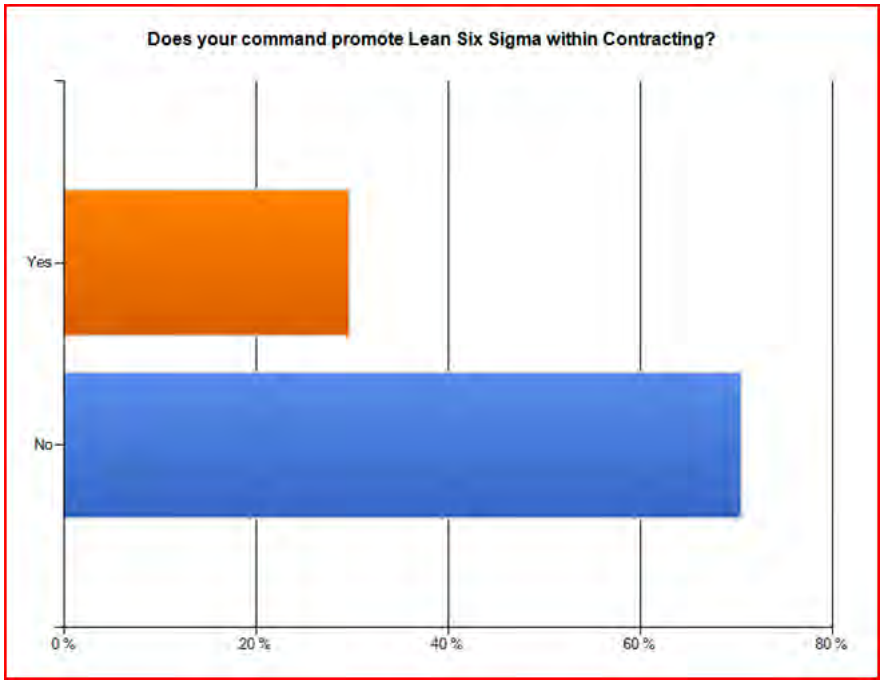


Table 2. Promotion of LSS within Contracting

It is very frustrating to know that a solution exists but is not being utilized. The Army has invested tremendous funds in developing LSS as its premiere CPI and to not implement it in a process that desperately needs it is inefficient. As shown in Table 3, it is apparent that there is no promotion of LSS since 74.3 percent of the participants had no responsiblitly for LSS in their current position, the only reason that they are aware of it is because someone other than an experienced LSS professional or a member of management told them about it. Is that due to an issue of applicability, an issue of getting the word out, or training the proper individuals?

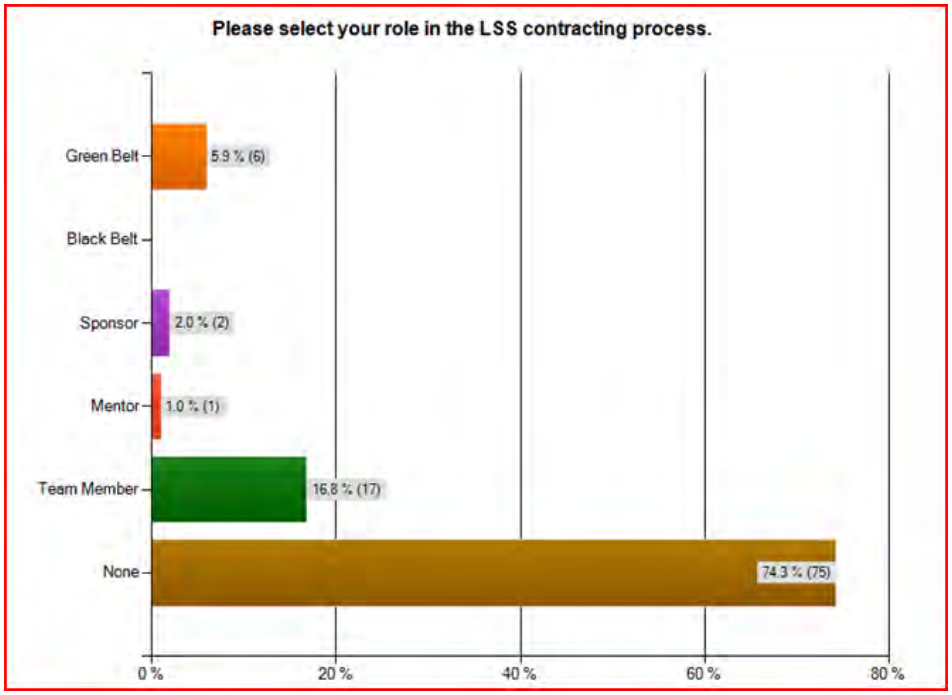


Table 3. Roles in the LSS Contracting Process

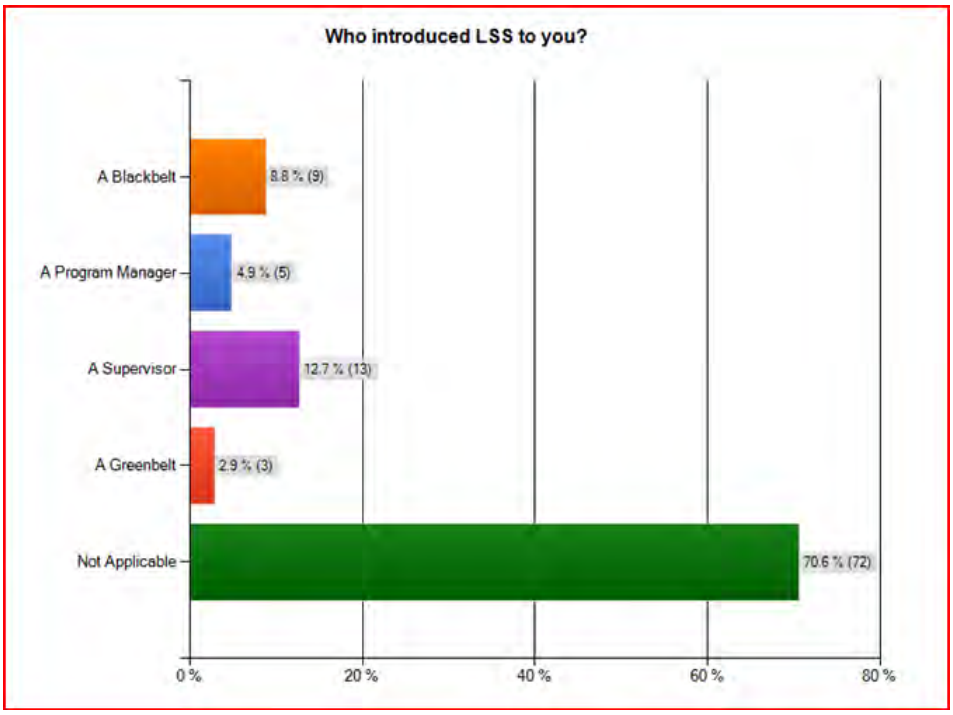


Table 4. Introduction to LSS

As indicated in Table 4, 70.6 percent of participants are aware of what LSS is. If people are fully aware of LSS and what benefits LSS can bring to a process, why has the Army not done a better job of implementing LSS in the Contracting Process, especially considering it is supposedly the premier CPI? LSS is certainly applicable to the Contracting Process because many procedures can be related to a production line. A few of the processes which are the most difficult to deal with include the Justification and Approval (J&A), Acquisition Plan, and the overall Review process. As indicated in Table 14, a suprising 68.9 percent feel that they are overwhelmed at work as they do not really understand their job description. On top of this, they are being forced to do more with less. Understaffed and overwhelmed workers lead to frustration and waste, which unfortunatly is defeating the purpose of this CPI.

Research question #2 was asked to determine if LSS helped facilitate process improvements for contracting. The survey results indicate that again, LSS missed the mark. When asked how many times LSS was used within the contracting process, almost everyone said “Never.” This does not imply that the process is ineffective, but rather that

there's no presence at all. And people are not opposed to change, as indicated in Table 5, 95.7 percent expressed a desire to see improvement within the Contracting Process.

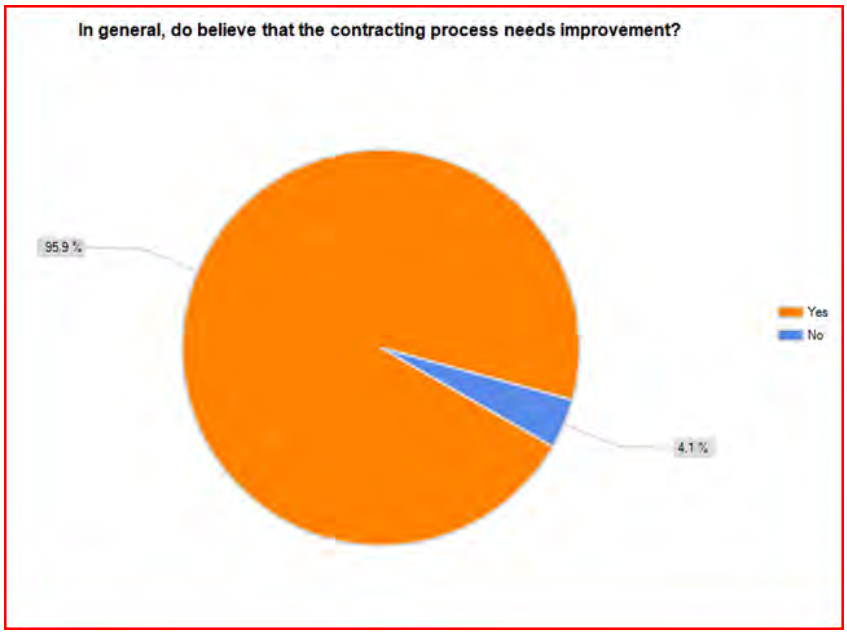
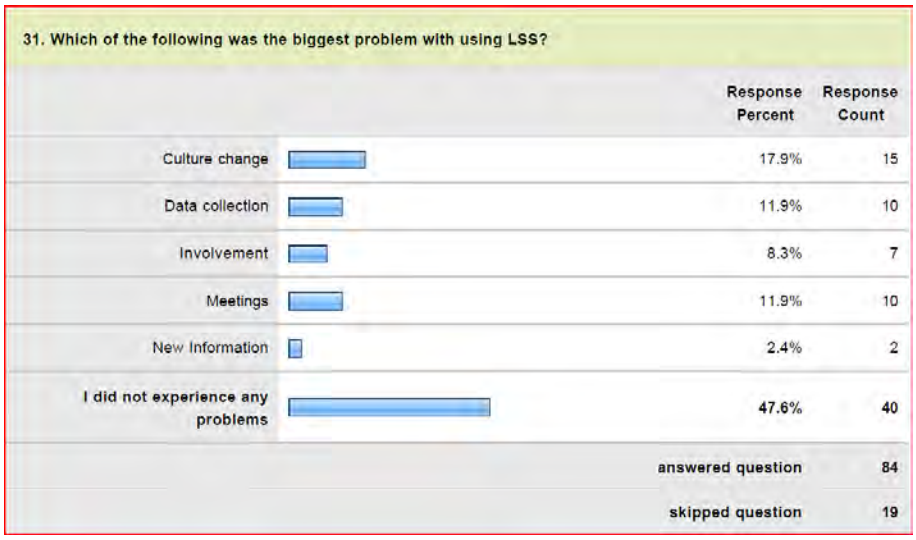


Table 5. Need for Improvement in the Contracting Process

The desire is certainly there. As shown in Table 13, 91 percent of people feel that they can perform their job better, but there is no effective method in place to allow them to do so.

Research question #3 was asked to determine what improvements, if any, are necessary to improve LSS. As shown in Table 6, 47.6 percent of survey participants did not experience any problems with LSS. We must remember that only 28.6 percent have LSS promoted within their command and 74.6 percent had no responsibility for LSS. So, if no individuals are using LSS to begin with, of course there is no visible issue with it. Table 6 also shows that of the people that did find an issue with LSS, 17.9 percent selected Culture Change, 11.9 percent selected Data Collection, 8.3 percent selected Involvement, 11.9 percent selected Meetings, and 2.4 percent selected New Information. Again, the LSS process itself is not the issue, but rather the effort, time, and knowledge it takes to implement it.

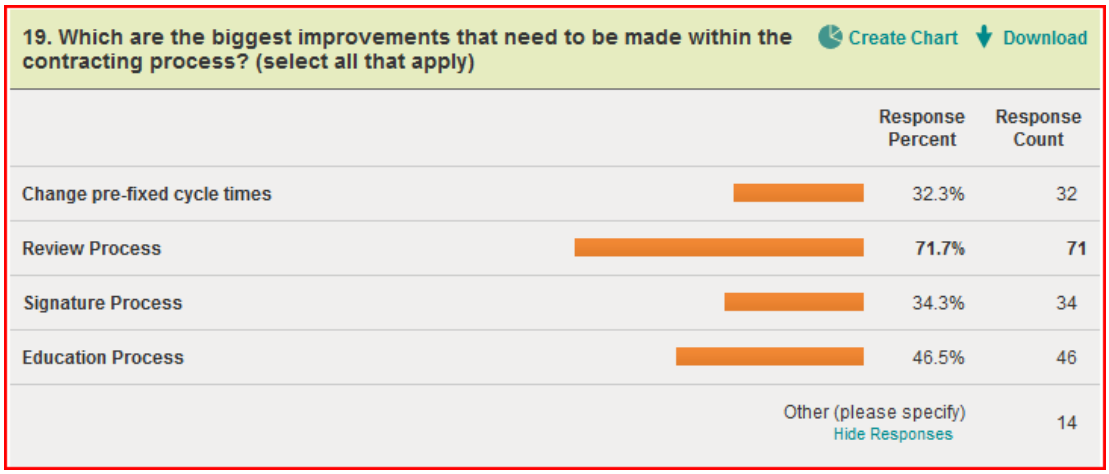


31. Which of the following was the biggest problem with using LSS?

	Response Percent	Response Count
Culture change	17.9%	15
Data collection	11.9%	10
Involvement	8.3%	7
Meetings	11.9%	10
New Information	2.4%	2
I did not experience any problems	47.6%	40
answered question		84
skipped question		19

Table 6. Biggest Problems with using LSS

Survey responders were asked to explain the areas of contracting they felt the most improvement could occur; the majority of people touched on issues related to the signature and review process. Like a factory line at Toyota, or another production line from which LSS was built, the signature and review process is an extremely systemic process and a viable fit for LSS. Below are the results of what happened when Contracting Professionals were asked what they felt needed the biggest improvement. Table 7 illustrates that 71.7 percent felt that the Review Process needed the most improvement. Of the 14 people that felt another process needed improvement, most answered in a similar fashion. These answers all touched on the fact that Standard Operating Procedures (SOPs) are missing, a uniform process is required, and people need a consistent process to be effective.



19. Which are the biggest improvements that need to be made within the contracting process? (select all that apply) Create Chart Download

	Response Percent	Response Count
Change pre-fixed cycle times	32.3%	32
Review Process	**71.7%**	**71**
Signature Process	34.3%	34
Education Process	46.5%	46
Other (please specify) Hide Responses		14

Table 7. Suggested Improvements

When thinking critically about the review and signature process, as an example of something that LSS could impact, possibilities emerge. When thinking of a document that must be reviewed and signedm there are stopping points for review; i.e. one person reviews and then passes the document on to another. This is similar to the way a car moves down a production line. It stops at a particular point to have the doors put on. It stops again at a particular point to have the wheels put on. So on and so forth. There are several steps that must occur before the final product is complete, and in some instances the process is repetitive. Define, Measure, Analyze, Improve, Control all seem like applicable techniques when thinking of the contracting process in such a system manner. The key is in the approach to the process. Visualizing a systemic process flow helps to break down all the steps to producing a final product. Of course the complexities and uniqueness of each acquisition make a one-size-fits-all approach ineffective, but the concept can definitely be applied if Contracting Professionals have identified the document review process as a difficult and challenging step.

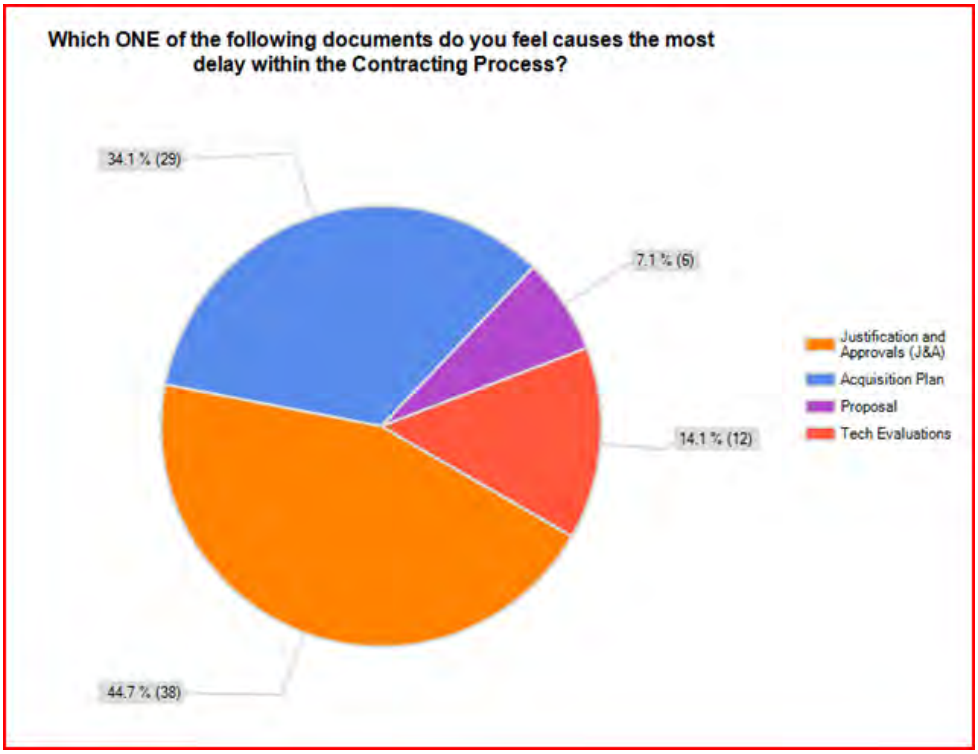


Table 8. Documents Causing Delay

Rather than apply a CPI such as LSS to the overall Contracting Process, perhaps a CPI should be applied at the document working level so that when put together, results are apparent. Peter Drucker's Systems of Systems is applicable here as he explains, "the whole is made up of the sum of its parts." A less systemic process like the selection of clauses or cost analysis would not benefit from the strengths that LSS has to offer, however, the results shows in Table 8 indicate the J&A and Acquisition Plan review and signature process absolutely do. Since the J&A and Acquisition Plan go through a series of steps, focus can be placed on each one of those steps to make them more efficient. For example, once a Requiring Activity writes the document, it is then sent to the Contracting officer for a review. Once the Contracting Officer is finished with their review, it is then sent to the next person in the review chain, and so on and so forth until a final signed document is complete. Each step in this review process can be expedited. When all the expedited steps are strung together, the process as a whole is streamlined. Thus the whole is made more efficient by the sum of its parts.

LSS may not be the perfect one-size-fits-all solution to fixing the Contracting Process, but it certainly has some benefits. If the Army is not promoting LSS, then how would the workforce ever know what its limitations or strengths are? There's a demand for some kind of CPI and it will only grow stronger. As depicted in Table 14, 68.9 percent are overwhelmed and the Inexperience is a major player in that statistic. The current trend in the federal government is to do less with more. This is a huge cry for a CPI to streamline the process and alleviate unnecessary administrative burden, but this CPI cannot add to an already discouraged workforce.

Research question #4 was asked to determine the relative advantages and disadvantages of LSS within contracting.

Our survey indicated that the contracting workforce believes that LSS can Save Money, Time, Expedite Processes, Increase Quality, and facilitate Best Practices. The results shown in Table 9 are relatively even at 40.7 percent, 52.1 percent, 65.4 percent, 51.9 percent, and 56.8 percent, respectively.

25. Which of the following are advantages of LSS in Contracting? (select all that apply)

	Response Percent	Response Count
Saves Money	40.7%	33
Saves Time	53.1%	43
Expedite Process	**65.4%**	**53**
Increased Quality	51.9%	42
Shared Best Practices	56.8%	46
None, there are no advantages to LSS	11.1%	9
	Other (please specify)	19
	answered question	**81**
	skipped question	**22**

Table 9. Advantages of LSS in Contracting

The major disadvantage to LSS is not in the process itself, but rather in the burden of employing a new process. As stated in the Lean Six Sigma Implementation Challenges individuals have a "concrete head." Individuals are unwilling to hear new ideas. People are scared of change, and do not have the energy to learn something new when they are overwhelmed with work. They have a natural resistance to hearing new ideas. Coupled with how overwhelmed the workforce is, Table 10 indicates that 25.3 percent of participants are Frustrated with having to learn a new process, 45.3 percent do not want Something new to learn, 37.3 percent feel that it is too Time Consuming to incorporate, and 9.3 percent plainly think LSS is Unnecessary. As stated in the Lean Six Sigma Implementation – Lessons Learned video, Mr. Michael Joyce from Lockheed Martin states "LSS works, if you have tried it and it didn't work, then you didn't try hard enough."

26. Which of the following are disadvantages of LSS in contracting? (select all that apply)

	Response Percent	Response Count
Frustration	25.3%	19
Something new to learn	**45.3%**	**34**
Time Consuming	37.3%	28
Unnecessary	9.3%	7
None, there are no disadvantages to LSS	25.3%	19
	Other (please specify)	24
	answered question	**75**
	skipped question	**28**

Table 10. Disadvantages of LSS in Contracting

Clearly LSS in its current form would not make a meaningful impact and is being rejected before it even has a chance to make an impact. A streamlined and concentrated version of LSS would be more beneficial. LSS is being implemented as a one-size-fits-all solution, when that does not work for contracting. There are a variety of scenarios

that the contracting workforce faces and LSS needs to be a part of each of these unique scenarios. Currently LSS requires the five step approach of (Define, Measure, Analyze, Improve, Control) in order for a project to be recognized and be proved as meaningful. There needs to be a hybrid model made available and implemented which will still allow for improvements and realize financial benefits. As explained above, there are a variety of documents that the workforce considers the cause of delay. Each of these documents requires a LSS mentality to correct, but at the working level. A second disadvantage is that it is not being promoted. This is not a flaw within LSS itself, but rather a shortcoming of senior leadership. Senior leadership has to be onboard in order for LSS to be a priority within the contracting workforce. Senior leadership can provide the vision which will guide how LSS should be used within the workforce and process improvements. It should be part of the daily and strategic planning. Leadership needs to make the time available in their planning to allow for process improvement events.

C. OVERALL ANALYSIS

Our analysis indicated that approximately 60 percent of people polled had between 1 and 5 years of experience. This is no surprise considering the shape of the Contracting workforce and reports such as the Gansler Commission. As explained in the Acquisition Workforce Strategic Plan 2010 – 2014, the Office of the President of the United States outlines how a reduced workforce leads to unfavorable tradeoffs throughout the acquisition process. With the majority of our responses being in the 1–5 year range, our average experience was greatly reduced.

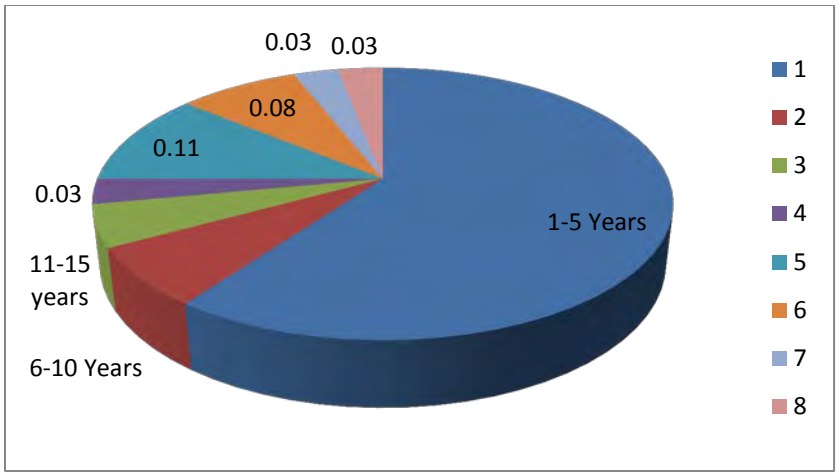


Table 11. Average Experience

The majority of workers have one (1) to five (5) years of experience. Perhaps this statistic is all too telling and a clear indication that there's a strain on the experienced contracting professional. Compounding this problem is the mentality that the inexperienced worker is putting pressure on the skilled professional. One of our survey questions asked this specific question, and the results are displayed in Table 12:

9. What do you think are the increasing pressures on the Contracting Process? (select all that apply)

	Response Percent	Response Count
BRAC	60.8%	62
Retiring Workforce	71.6%	73
Inexperienced Workers	94.1%	96
Changing Regulations/Policies	58.8%	60
Other (please specify)		23

Table 12. Increasing Pressures on the Contracting Process

As the results above show, 94.1 percent indicated that the Inexperienced Workers are increasing the pressures on the Contracting Process. It undoubtedly will be difficult to interject a LSS process when such a large majority of professionals do not know how the contracting process should work to begin with. Remember that 60 percent of the

people taking this survey had less than five years of experience and even they recognize the pressures of being Inexperienced. An analysis of the open ended portion of this question reveals an interesting trend. In the open ended questions of this survey, several responses provided indicate a frustration with a defined standard operating procedure. This is interesting because not having experience creates an obvious pressure on the workforce, but neglecting to provide the resources and information to the workforce is another problem in itself. Provided with the right tools to do the job, a young contracting professional can teach themselves the basics of contracting rather quickly. Without the tools, the same professional squander in the layers upon layers of regulations, policy and protocol. With several undefined processes in the field, perhaps there is no better time for reform? Old habits have not formed and the workforce has the opportunity to learn fresh processes. If the entire workforce had 20 years of experience or more, change might be much more difficult; but with such inexperience, change may be must smoother. The more difficult challenge may not lie in the Inexperience however; but more appropriately the lack of implementation at the Army level.

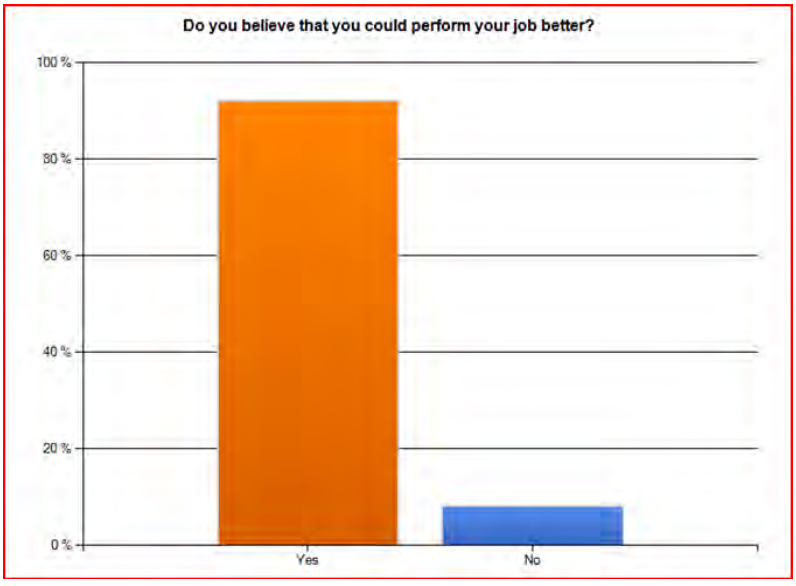


Table 13. Belief in Better Job Performance

People truly care about the quality of their work, but LSS is not in place to make things better, in fact, there does not seem to be a CPI in place at all.

LSS has been around since 1986, so it is not a new process. Contracting Professionals know what this process is and many recognize that it can do good things when implemented efficiently and effectively. Another finding is that not everyone feels the same way about the process. When asked about applicable LSS training and it's benefits, one answer stated, "(LSS tries) to improve the quality of the contracting process by identifying and removing the causes of inefficiencies" while another answer stated, "(LSS) does not apply to us, at least for now." So, there is a broad spectrum of expectancies from the workforce when it comes to LSS in Contracting. Perhaps this is why the process has not penetrated the Contracting profession very deeply. Whatever the explanation is, two things are certain: 1) the Army is pushing for LSS to be the CPI, 2) there's no presence in Contracting based on data.

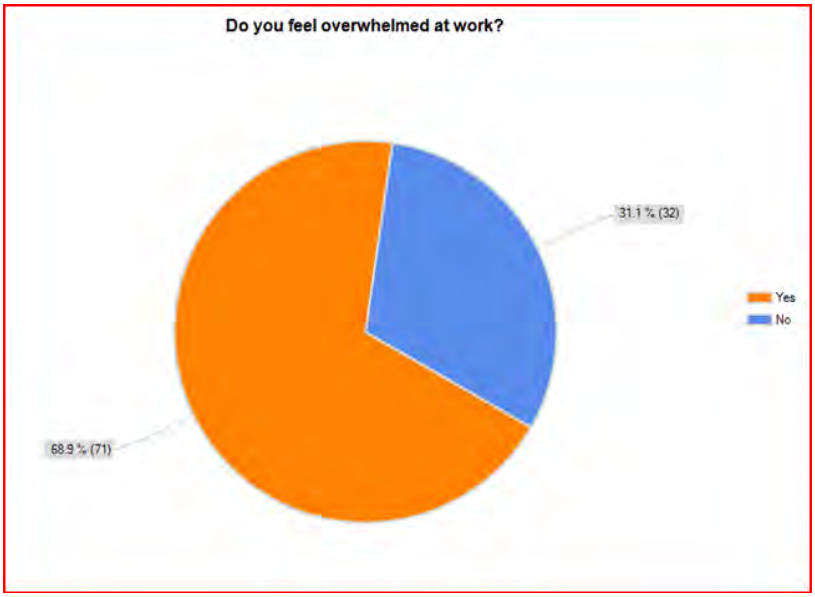


Table 14. Assessment of the Overwhelmed Worker

As indicated in Table 14, 68.9 percent of the participants feel overwhelmed, a majority feel this way because they are Understaffed. The 22 people that gave another reason besides the prescribed selections cited "All of the Above" as their reason.

16. If yes, why do you feel overwhelmed?	Create Chart	Download
	Response Percent	Response Count
Understaffed	33.3%	25
Undertrained	17.3%	13
Management	17.3%	13
Poor Communication	16.0%	12
Not Applicable	16.0%	12
Other (please specify) Show Responses		22

Table 15. Causes of the Overwhelmed Worker

Based on the survey results and literature review, LSS in contracting is not currently a valuable tool in contracting although people believe that it can work. Pressures on an already inexperienced and overwhelmed workforce add to the failure of LSS but people have not totally given up on LSS. In other words, there still is hope that LSS can work in contracting but it needs to be tailored to fit the needs of the workforce and streamlined. We need a LSS approach to LSS! There are relative advantages to LSS but the big disadvantage is that there's just not enough time, ability, or knowledge to implement it. The variety of documents that individually cause delays all need to be addressed separately and combined to expedite the overall process. People really want to improve the process and feel that it is possible, but a useful CPI does not exist to make this happen.

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V. CONCLUSION

A. FOCUS QUESTIONS

This project focused directly on the impact of LSS within the contracting process. The Army considers LSS to be the premier CPI and expects that this Management Process will lead the Army in its endeavor for sucessful Business Transformation. Power Steering Projects are being completed, which suggest that LSS is a viable solution for the Army to complete this mission, but nobody is following up to see if these projects are a success at the working level. The focus questions of this project have been answered and indicate that the Army's belief may not be true. The results of the focus questions go against the goals of the Business Transofrmation Strategic Framework and the Army Posture Statement as discussed above.

B. AREAS FOR FUTURE RESEARCH

While it is true that there are many great aspects of LSS, it is not neccesarily the most prominent fit for contracting. This research team hereby recommends that further research be conducted to analyze the impact of LSS in contracting. There is no one perfect management process to fix everything within contracting and a hybrid process must be created. Future research should isolate the outliers affecting the quality and cycle time within contracting to get to the root cause. Once the root cause is exposed, a solution can be interjected. Future research should evaluate a larger sample to see if there are commands that effectivly implement LSS. If there are, these results should be studies and disseminated world wide. Time and funding precluded this research team from expanding beyond this sample. With a broader reach, the results of this survey will likely be altered. Future research is worth the time and effort as the Army has no choice but to alter the way it does Business.

C. CONCLUSION

Our recommendation is to assess the true strengths of LSS and determine where those strengths can fit into the process. Maybe the people that vouched for LSS primarily

work on portions of the process where it's applicable; e.g., signature and review process. Others might not have such a systemic encounter and therefore do not see it as a useful tool; e.g., regulation interpretation. The point is that LSS may be a fit for some of the processes that a Contracting Professional will experience in their career, but not all. The Army looks at LSS as a one-size-fits-all solution, when this may not be the case. Futher analysis of the Contracting Process and the strengths of LSS will likely reveal that a hybrid management process is the remedy as explained by Mr. Michael Doelling. The complex layer of the contracting process cannot be peeled back and streamlined with one simple solution. A complex process such as this requires a complex solution with just as many facets. The key will be to penetrate deep down into the core of the process and affect those that are doing the majority of the work. This means that a culture change is required at the Contracting Officer and Contract Specialist level. These professionals need to constantly be employing LSS or a hybrid version of LSS and another CPI to truly make a differnece. Every document that comes accoross a contracting professionals desk needs to be accompanied by a LSS strategy for how that document will move forward. Focusing on the four imperitve components of LSS can help to achieve this. The four components are:

- An innovation vision based on factual customer and market insights.
- Leadership committed to perpetual innovation
- Alignment across the extended enterprise
- Organizational capabilities that made innovation habitual

Looking at the contracting process as a whole is a daunting task and it changes quite significanlty depending on the scenario. Therefore, when LSS is embedded into the mentality of the Contracting Officer and the Contracting Specialist, tiny Power Steering projects can occur instanataneously as the Life Cycle of the Acquisition flows. In other words, a forward thinking, proactive, consciencous workforce will produce results at the lowest level of production, so that when all the pieces are put together, a Lean Six Sigma end product comes to fruition.

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