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**DEVELOPMENT OF MEASURES OF SUCCESS
FOR CORPORATE LEVEL AIR FORCE ACQUISITION INITIATIVES**

THESIS

Carey E. Petit, Captain, USAF

AFIT/GAQ/ENV/04M-09

**DEPARTMENT OF THE AIR FORCE
AIR UNIVERSITY**

AIR FORCE INSTITUTE OF TECHNOLOGY

Wright-Patterson Air Force Base, Ohio

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AFIT/GAQ/ENV/04M-09

DEVELOPMENT OF MEASURES OF SUCCESS
FOR CORPORATE LEVEL AIR FORCE ACQUISITION INITIATIVES

THESIS

Presented to the Faculty

Department of Systems and Engineering Management

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Air University

Air Education and Training Command

In Partial Fulfillment of the Requirements for the
Degree of Master of Science in Acquisition Management

Carey E. Petit, BS

Captain, USAF

March 2004

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DEVELOPMENT OF MEASURES OF SUCCESS
FOR CORPORATE LEVEL AIR FORCE ACQUISITION INITIATIVES

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Abstract

The goal of this research is to suggest a framework for developing measures of success for corporate level Air Force acquisition initiatives. Because this research is exploratory, it focuses on only one initiative: the 2002 Lighting Bolt initiative “Focus on results, not process.” A qualitative method approach was used to suggest a four part framework. Through the review of literature, common steps for creating metrics were established and recurrent characteristics of good metrics were identified. Then interviews were conducted with acquisition practitioners who have experience with the initiative. Finally, those three parts were applied to the initiative as a case study and metrics suggested as a result.

This study gives Air Force leaders clear, implementable metrics that can be used as measures of success for the initiative, and provides recommendations to improve this initiative’s performance and that of future corporate Air Force acquisition initiatives. This study also gives leaders insight into whether or not this initiative and others like it are an appropriate and effective way to drive the changes they are meant to bring about. Finally, from a broader perspective, the framework used in this study can be used to develop metrics for other corporate level initiatives.

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Captain Carey Petit

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DEVELOPMENT OF MEASURES OF SUCCESS FOR CORPORATE LEVEL AIR FORCE ACQUISITION INITIATIVES

I. Research Foundation

Background

Almost since its inception in 1947, the Air Force has sought to reform the way it procures weapon systems. Many factors involved in the weapon system acquisition process are external to the Air Force and out of its control (i.e., Congressional constraints, the pace of technology development, weapon system requirements constantly changing as real world needs dictate). However, self-imposed administrative hurdles are an internal factor that the Air Force can change in order to help improve its procurement practices.

To target the elements of the acquisition process within the Air Force's control, the Air Force began implementing a series of acquisition reform initiatives in 1995. These initiatives, referred to as "Lightning Bolts," were created in direct response to Air Force leadership's growing concerns that it takes too long to put weapon systems in the hands of the warfighters (Department of the Air Force, 4 February 2003; Department of the Air Force, 1:10 July 2003). Collectively, their purpose is to serve as the catalyst by which administrative changes are made in Air Force business practices (Senate Armed Services Committee, 2002). However, little is known about how to gauge the success of these initiatives. Many metrics have been suggested for gauging the success of acquisition reform attempts within the Department of Defense (DoD), but most of the

metrics remain slated for use only in individual acquisition program offices (Pope, 1997:75-77). No list of standard metrics exists, and there are no generally applicable and logical methods to measure the performance of acquisition reform initiatives today (Beamon, 1999; Pope, 1997:75-77). Accordingly, this project is designed to help better understand these initiatives and how to establish acquisition based measures of success.

Gaining a better understanding of the aspects of metric development, and identifying the recurrence of those aspects among multiple authors, will enable this research to create a model upon which acquisition based metrics can be built. That model will then be applied to the 2002 acquisition Lightning Bolt initiative “Focus on results, not process” as a case study.

Problem Statement

Senior Air Force leaders need to know how well the Lightning Bolt 2002 initiatives are achieving their intended objectives. This research will develop the means to measure how successfully the Lightning Bolt initiative “Focus on results, not process” is achieving its objectives. As a result, this research will create a model for developing measures of success that can be applied to larger, corporate level Air Force acquisition initiatives.

Methodology

This research uses a qualitative research method approach. Qualitative data will be collected and analyzed initially, followed by an independent evaluation of the findings. The qualitative research will use a case study to develop measures of success for the initiative of interest, and evaluate the effectiveness of that initiative in the

conclusions and recommendations stage. As part of future research, quantitative data can help reinforce and confirm the qualitative results.

Outline

Chapter two (Literature Review) provides a history of the Lightning Bolt 2002 acquisition initiatives, and explains why metrics are important to use and their composition. It also provides a description of the general steps to creating metrics and the characteristics that good metrics have. It then discusses how metrics are applicable to acquisition reform initiatives.

Chapter three (Methodology) describes the methodology for the study, including the interview process used for data collection, the spiral method that will be used to analyze the data, the techniques used to validate the analysis, and the methods used to identify a generalized three step process for creating metrics and the core attributes of good metrics.

Chapter four (Data Analysis) provides an analysis of interview data collected and an explanation of the resulting themes that evolved. Those results are then tailored to the “Focus on results, not process” acquisition initiative.

Chapter five (Conclusions and Recommendations) summarizes the research findings, discusses data collected during interviews and the conclusions reached from that data, and provides implementable recommendations. The chapter also suggests areas for future research and study.

Impact of Study

This study will give Air Force leaders clear, implementable metrics that can be used as measures of success for the Lightning Bolt initiative of interest. This study will also give Air Force leaders insight into whether or not this initiative is an effective and appropriate way to drive the changes it was meant to bring about. In a broader application, the framework used in this study can be used to develop metrics for other acquisition based corporate Air Force level initiatives.

II. Literature Review

This chapter provides the foundation upon which metrics to assess the Lightning Bolt 2002 initiative “Focus on results, not process” can be developed. In turn, the research results and metrics can be generalized for any large acquisition based initiative and thus fulfill the corporate purpose of the research. First, this chapter describes the background and purpose of the specific initiative being examined along with five others that have been developed to facilitate the United States Air Force acquisition community’s improvement and transformation efforts. Next, the chapter reviews the importance of metrics and what metrics are; general steps involved in developing metrics; attributes of good metrics; and how metrics can be applied to acquisition reform initiatives. It is through this review that commonalities among theories of metric development will be used to build a collection of attributes found to be recurrent among good metrics. Then, a list of metrics, generated through a series of interviews, will be assessed against the characteristics of good metrics to construct a set of useable metrics for the Lightning Bolt 2002 initiative entitled “Focus on results, not process.”

Acquisition Lightning Bolt 2002 Initiatives

On 27 February 2002, in an update to the Senate Armed Services Committee (2002:¶11) on the Air Force’s on-going acquisition reform efforts and progress, the Assistant Secretary of the Air Force for Acquisition, Dr. Marvin Sambur, reaffirmed the goal set for the Air Force by the President and the Secretary of Defense to transform the military and improve how it does business. He stated that the Air Force must reduce the cycle times for moving new technology from the laboratory to the battlefield. At the

same time, he said that the acquisition community must improve their ability to estimate both costs and schedules and greatly reduce the number of program surprises that undermine confidence in our programs and disrupt our progress. Acquisition practitioners must increase their delivery speed and regain credibility with the warfighter; acquisition practitioners must deliver what they say they are going to deliver when they say they are going to deliver it.

In an effort to address senior leaders' desire to improve speed and credibility, the acquisition leaders released the most recent round of Lightning Bolt initiatives in 2002. Similar sets of initiatives have been released in groups of six to ten, approximately every two years since 1995. Two of the six initiatives released in 2002 are process oriented. The "Focus on results, not process" initiative encourages streamlining existing acquisition processes, challenging those that do not add value, and getting rid of the processes that do not make sense; in turn, the initiative allows acquisition practitioners to keep their focus on delivering capabilities that meet the needs of warfighters. The second process initiative is designed to strengthen continuing process improvements and communication between the government and contractors by creating a knowledge pipeline. (Druyun, 2001; Senate Armed Services Committee, 2002)

The other four 2002 initiatives are people oriented. The spiral development initiative is designed to encourage cooperation between warfighters and acquisition practitioners during the development and incremental delivery of warfighting capabilities. In other words, it makes the standard way of doing business between the acquisition community and warfighters a collaborative effort which looks at the entire capability the warfighter needs and incrementally delivers fully functional portions of that capability as

funding levels will allow, until the entire capability can be delivered. The “road-block buster” initiative gives managers a single point of contact to help them remove administrative and bureaucratic stumbling blocks, thus freeing them to be innovative; the Acquisition Centers of Excellence (ACE) were created to be the single point of contact specified in this initiative. The initiative entitled “breeding innovators” targets changing the ingrained culture of the acquisition workforce through acquisition reform education. Finally, the last initiative sparked the creation of a Program Executive Officer (PEO) for service contracts in order to ensure that the Air Force is leveraging its buying power as the portion of its money spent on services contracts continues to increase. **Table 1** is a summary of the title and objective of each of the 2002 Lightning Bolts. (Druyun, 2001; Senate Armed Services Committee, 2002)

Table 1. Summary of 2002 Acquisition Lightning Bolt Initiatives
(Consolidated from Druyun, 2001 and Senate Armed Services Committee, 2002)

2002 Lightning Bolt	Initiative Objective
Focus on results, not process	Drives “clean-sheet” approach to acquisitions by streamlining processes in order to remove non value-added steps.
The knowledge pipeline	Creates a “knowledge pipeline” with industry to ensure continual communication and process improvements among both contractors and the government.
Spirals: success in increments	Makes collaborative spiral development the preferred acquisition approach and requires collaboration between warfighters and the acquisition community.
Road-block busters	Frees managers to innovate and provide managers with a focal point to help them remove bureaucratic roadblocks.
Breeding innovators	Strives to refresh, revitalize, and sustain the workforce.
Program Executive Officer (PEO)/Service contracts	Obtains the best possible value out of the rising portion of Air Force procurement money spent on service contracts.

This research will focus on the Lightning Bolt 2002 initiative most closely linked with the corporate goal set for the Air Force to improve speed and credibility: “Focus on results, not process”. This initiative drives a “clean-sheet” approach to acquisitions by streamlining processes in order to remove non value-added steps (Senate Armed Services Committee, 2002:¶14). In other words, the initiative frees up the administrative hands of acquisition practitioners to allow them to be as innovative as possible within the confines of the law. A recent example of this initiative in action is the rewriting of one of the regulations that governs weapon system procurement within the Air Force, and the rest of the Department of Defense (DoD), the DoD 5000 series (i.e., DoD Directive 5000.1, DoD Instruction 5000.2, and DoD 5000.2-R). The DoD 5000 series documents were canceled on 30 October 2002 by the Deputy Secretary of Defense, Paul Wolfowitz, then interim guidance was issued; the 5000 series documents have subsequently been revised (Wolfowitz, 2002). DoD 5000.1 was reissued (New DoD System Acquisition Process (DoD 5000)). DoD 5000.2 was revised; unlike the old version which focused on multiple superfluous requirements, the new version goes in depth into the acquisition model and looks specifically at statutory requirements and required outcomes (New DoD System Acquisition Process (DoD 5000)). DoD 5000.2-R is no longer a mandatory document, but is serving as the Interim DoD Acquisition Guidebook until the new streamlined DoD Acquisition Guidebook is completed; program managers and decision authorities are now empowered to decide what kind of information is necessary to satisfy regulatory requirements (Defense Acquisition University Presentation; Department of Defense (DoD), 2002; New DoD System Acquisition Process (DoD 5000)).

With the continued push for acquisition reform and the goal of increased speed and credibility, senior Air Force leaders want to know how well the Lightning Bolts are actually doing their job. Currently, no metrics are in place to measure their success. This research will create a framework for building such measures of success by examining why metrics are important, what metrics are, the steps involved in creating metrics, the characteristics that good metrics should possess, and how metrics can be applied to acquisition reform initiatives; the framework will then be applied to a recent initiative and suggest metrics for it.

Metrics

Why bother to develop metrics in the first place? Simply put: to improve performance (Antanitus, 2003:10; Buchheim, 2000:309; Rummler and Brache, 1995:135). Metrics are frequently dubbed ‘performance measures’, meaning they tap how well an organization is performing (Goett, 2003; Klapper, Hamblin, Hutchison, Novak, and Vivar, 1999; Lambert and Pohlen, 2001:1; Milliken, 2001). The ultimate goal of metrics should be “performance” not the measures themselves (Milliken, 2001). Osborne and Gaebler (1992:147-154) note that: if the results of that performance are not measured, success cannot be differentiated from failure; if that success cannot be seen, it cannot be rewarded and failure is likely being rewarded instead; and if failure cannot be recognized, it cannot be corrected. The purpose of performance measures, or metrics, is not just to examine how an organization is performing, but to help it perform better (Hammer, 2001:109).

Metrics are used to improve performance; furthermore, properly structured metrics can drive superior performance. Keebler and others (1999:13) surveyed 355 retailers, manufacturers, and transportation providers in the United States and conducted case studies of roughly two dozen companies, and discovered a great disparity in levels of performance. The singularly most important factor that Keebler and others (1999:13) found to be driving superior performance was the presence of well-utilized and properly structured measurement programs. Inadequately structured metrics can drive the wrong behaviors and even result in dysfunctional behaviors (Neely, Richards, Mills, Platts, and Bourne, 1997). Even though there has been a high level of interest in metrics within industry and academia, and many methods have been suggested to develop metrics, no one has addressed what makes up a well-designed metric and no one has compared these methods for effectiveness (Neely and others, 1997). This research proposes that a well-designed metric is one that is systematically created and one that possesses the attributes of good metrics found to be common within the literature.

Additional evidence of how the use of metrics has been empirically shown to improve performance is seen through the implementation of goal setting (see, for example, Locke, Shaw, Saari, and Latham (1981:126)). Metrics are the feedback mechanism by which progress toward organizational goals is measured (Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics, 1999:133). For example, as part of a recent policy directive from the Secretary and Chief of Staff of the Air Force on improving speed and credibility within the acquisition workforce, the Commander's Initial Guidance section states that the overall goal is to shorten the time it takes for decisions and getting more capable weapon systems out to the warfighter by a

factor of four (Department of the Air Force, 10 July 2003:3). Correspondingly, the metric to determine if that goal is met will be cycle time. By virtue of a goal being set, metrics can be used; therefore, based on the literature, this research shows that empirical evidence supports that the use of metrics improves performance.

The following examples further support that the implementation of metrics increases performance. The concept of assigning workers a specific task (a term which Locke (1982:16) notes is basically the same as a goal), along with incentive pay and time and motion study, served as the basis for Frederick W. Taylor's principles of scientific management (Latham and Locke, 1979:69; Taylor, 2001:61-72). Taylor increased blue collar worker productivity through the use of his scientific management system (Taylor, 2001:64). Locke (1968:157) later theorized that goal setting is directly tied to task performance; he explains that difficult goals result in higher performance than easy goals, and that specific, hard goals lead to even higher performance levels compared to generalized "do your best" goals or no goals at all. Latham and Yukl's (1975:824-843) evaluation of Locke's theory and their meta-analysis of twenty seven published and unpublished field research reports consistently found that goal setting produces increased performance. Also, Latham and Locke's (1979:68-80) laboratory and field research showed that the use of goal setting increased production by an average of nineteen percent. In addition, Locke and others' (1981:125,131) evaluation of one hundred and ten laboratory and field studies on goal setting effects on task performance found that ninety-nine of those studies showed higher performance resulted from setting specific, hard goals than from no, "do your best," easy, or medium goals. A significant amount of

data attests to the presence of increased performance when goals are set, and, therefore, when metrics are used.

In addition to metrics' importance because of improved performance, Keebler, Mandrodt, Durtsche, and Ledyard (1999:80-81) point out that measures aid companies in determining how to remain competitive and confirm the value customers place on their services. And the underlying truth within the axiom that what gets measured gets attention is yet another reason to use metrics (Eccles, 1991:131; Osborne and Gaebler, 1992:146).

Now that the importance of metrics has been discussed, a description of what constitutes a metric will help facilitate the explanation of this research. *The Metrics Handbook* developed by Air Force Systems Command (1991:1-1) defines metrics as meaningful measures, and data are meaningful when they allow action to be taken. Similarly, Antanitus (2003:11) calls metrics items you would like to measure. Metrics emphasize the customer, support organizational objectives and goals, facilitate process understanding, and encourage continual improvement of how business is done (AFSC, 1991:1-1).

According to Clark and Wheelwright (1994:262), there are two types of measures: results measures, which tell a team where it currently stands in its attempt to reach a goal, rather than how it got there or what it could do differently; and process measures which look at activities and tasks within an organization that produce given results. Also, metrics can be expressed both qualitatively and quantitatively (Beamon, 1999). Quantitative metrics are frequently preferred because qualitative metrics, like "poor," "fair," and "good," are vague and hard to use in a meaningful way (Beamon, 1999).

However, quantitative metrics may not adequately discuss a system's performance and, as a result, may be just as vague (Beamon, 1999). Locke (1978:600) points out that it should not be assumed that specific quantitative goals, and, in turn, metrics, are inevitably beneficial. Some areas where results are more difficult to measure may require qualitative goals, and, in turn, qualitative metrics (Locke, 1978:600). The decision between qualitative and quantitative metrics depends upon the nature of the system for which the metrics, or goals, are being established.

It is worthwhile to note that several concepts have become prevalent within the business arena over the last two decades and have popularized, and somewhat revolutionized, the use of metrics, namely the balanced scorecard (Kaplan and Norton, March 2001) and benchmarking (Eccles, 1991:131). Kaplan and Norton (March 2001; September 2001) created a way of linking metrics with the elements of an organization's strategy to create a new strategic management system. Metrics are one component of the balanced scorecard. Benchmarking is information gathering in industry to compare an organization's performance with that of other leading organizations that do the same or similar tasks (Camp, 1989:xiii; Eccles, 1991:133). Metrics are used in benchmarking, but are not synonymous with it.

Metrics have been utilized in many ways to improve performance and multiple methods have been proposed to develop them. This research looks at several of those methods and uses their similarities to propose one generally applicable three step method for creating metrics.

Steps to Create Metrics.

By comparing the numerous methods for systematically developing metrics that exist within the literature, this research found that nearly all of the methods share three common steps which will later be discussed. Of the literature reviewed, twelve authors presented thirteen general frameworks for creating metrics. The number of steps involved in each framework ranged from three steps up to eleven steps. For example, Clark and Wheelwright (1994:272-273) suggest a four step method: a) define factors critical to customer satisfaction; b) map cross-functional process through which results are obtained; c) identify capabilities and tasks necessary to complete process successfully; and d) design measures to track those capabilities and tasks. Rummler and Brache (1995:137-138) recommend a similar four step sequence: a) clearly establish the most important outputs of the process, job, or organization; b) for each output, establish the “critical dimensions” of performance; c) create measures for every critical dimension; and d) create standards, or goals, for each measure. In contrast, Eccles and Pyburn (1992) suggest a five step process that does not share the three steps found to be common among the other authors: a) choose non-financial measures that will compliment financial measures, determine relationships between them, and the create firm’s business performance model; b) establish methodology to be used to take the measures; c) select the frequency and layout of performance measurement reports; d) adjust how personnel are compensated and evaluated to encourage desired behavioral changes that will improve activity performance; and e) realize that a key element of a performance measurement system is that it will evolve with time as managers grow and increase their knowledge of measures’ relationships to one another and as conditions change. A

complete illustration of the general steps for creating metrics for all twelve authors found in the literature is shown in Table 2.

Table 2. General Steps for Creating Metrics within Literature

Step	AFSC	Antanitus (2003)	Brown (1996)	Buchheim
1	*** Identify purpose	*** Map corp competencies (i.e, define and agree upon them) by organization, division, department, etc. to lowest desired level	*** Prepare documents to guide organization and where you want to go (e.g., mission, vision, values)	Involve all affected organizations in development of performance metrics
2	** Develop operational definition starting with customer -- define who, what, when, where, why, and how of metric	** Map processes used to carry out your mission to the core competencies	Do situation analysis to research strengths and weaknesses of organization and those of main competitors. This is done to investigate factors that may help or hinder reaching your goal.	** Flow chart applicable process & determine important areas to customer -- identifies critical activities
3	Identify and examine existing measurement systems	* Identify metrics to be used to assess how well processes are being executed	** Define key business fundamentals and success factors. Most critical and difficult step.	* Establish performance measurements and goals or standards, and assign tasks of data collection, analysis, and reporting
4	* Create new metrics if existing metrics are inadequate		* Identify macro performance measures: a) identify measurement categories, b) measures within each category are brainstormed, and c) measures widdled down to vital few	Analyze and report metrics
5	Rate metric against attributes of a "good" metric		Measurement plan developed	Compare actual performance with goal or standard
6	Select appropriate measurement tools		Create procedures and instruments to collect data. Most time consuming step.	Evaluate causes of variance and possible corrective action
7	Baseline your process			
8	Collect and analyze metrics over time			
9	Finalize metric for external presentation			
10	Initiate process improvement activities			

Table 2. General Steps for Creating Metrics within Literature (continued)

Step	Clark and Wheelwright (1994)	Eccles and Pyburn (1992)	Evans and Lindsay (2002)	INCOSE (Practical Software/Systems Measurement (PSM) Method)	INCOSE (Goal/Question/Metric (GQM))
1	<p>*** Define factors critical to customer satisfaction</p> <p>Map cross-functional process through which results are obtained</p>	<p>Choose non-financial measures that will compliment financial measures, determine relationships between them, and create firm's business performance model</p> <p>Establish methodology to be used to take the measures</p>	<p>Identify all system customers and find out their expectations and requirements</p> <p>*** Define the work process by which the service or product is provided</p>	<p>Identify candidate measures</p>	<p>*** State information goal -- identify information stakeholders want and determine what they want to do with information</p>
2	<p>** Identify capabilities and tasks necessary to complete process successfully</p>	<p>Select the frequency and layout of performance measurement reports</p> <p>Ajust how personnel are compensated and evaluated to encourage desired behavioral changes that will improve activity performance</p>	<p>** Define value-adding outputs and activities that make up the process</p>	<p>Establish selection criteria</p>	<p>** Ask the question -- what questions need to be asked to determine if goal is being met</p>
3	<p>* Design measures to track those capabilities and tasks</p>	<p>Realize a key element of performance measurement system is that it will evolve with time as managers grow and increase their knowledge of measures' relationships to one another and as conditions change</p>	<p>* Create specific performance indicators or measures</p>	<p>Evaluate candidate measures against selection criteria to pick "best" measures</p>	<p>* Determine the measure -- identify parameters to be measured to answer the questions from step 2</p>
4					<p>Do and evaluate -- apply measures and evaluate their usefulness</p>
5			<p>Evaluate metrics to ensure usefulness</p>		

Table 2. General Steps for Creating Metrics within Literature (continued)

Step	Keebler and others (1999)	Mentzer and Konrad (1991)	Pinker, Smith, and Booher (1997)	Rummler and Brache (1995)
1	*** Start with organization strategy	*** Determine item to be evaluated (i.e., the goal or problem) and its context	*** Clearly identify metric's purpose	***Clearly establish most important outputs of process, job, or organization
2	Understand customer needs	** Identify inputs and outputs of task firm wants to evaluate	** Operationally define metric	** For each output, establish "critical dimensions" of performance
3	Understand other measure drivers	Analyze how measures are obtained; scrutinize reliability, validity, and meaningfulness of existing scales	Do not "reinvent the wheel"; review existing metrics to see if could be adapted to fulfill metric's operational definition	* Create measures for every critical dimension
4	Take process, or big picture, view of logistics	* Replace any unsatisfactory measures with measures that meet these same criteria	* Develop new metrics	Create standards, or goals, for each measure (goal is expected level of performance)
5	** Focus on key activities and processes	Do cost-benefit analysis of satisfactory measures to assess measure's cost versus usefulness	Check metrics' "goodness of fit"; determine if new metrics possess attributes of good metrics	
6	Assign process owner		Select method of presentation for metric	
7	* Use a few key measures only		Conduct dry runs with metrics, ask if metrics measure what they were intended to measure, and ask acquisition practitioners if metrics are meaningful; perform a "sanity" check	
8	Stay away from subjective measures		Get buy-in or consensus from participants	
9	Do not use averaging excessively		Develop database for tracking metric data over time and examining trends	
10	Be able to understand the statistics		Openly communicate metrics and adjust them based on participant critiques	
11			Use metrics	

No empirical evidence was found within the literature to suggest that any one particular method was better to use than any other. One size does not fit all and many differences exist among the authors' approaches, but three basic steps remained common among eleven of the thirteen frameworks examined (INCOSE, 1998:9). First, establish a starting point upon which to base the metrics; determine what you want to measure. Second, identify the most important elements of what you want to measure. Third, create specific metrics for those critical elements so as to improve the performance of the item being measured. If metrics are created by systematically following these three general steps and they possess the attributes of good metrics they will be properly-structured metrics and will have the potential to drive superior performance (Keebler and others, 1999:13).

Attributes of Good Metrics.

Certain characteristics distinguish good metrics from bad ones and well-designed metrics possess those good characteristics. Fourteen authors in the literature describe forty three distinct attributes that good metrics possess. The following are a representative list of the good metric attributes in the literature. Beamon (1999) says that good metrics have six characteristics: consistency with organizational goals, inclusiveness of pertinent aspects, measurability, meeting of customer goals and values, relating to strategic goals and mission of organization, and universality. In comparison, Buchheim (2000:311) describes good metrics as having eight characteristics, only one of which is common with those cited by Beamon (i.e, relating to strategic goals and mission). According to Buchheim (2000:311), good metrics: have a defined sensor that gathers and records data, like an automated test station data file or a clerk; have a defined

unit of measurement (e.g., hours per widget produced); are meaningful to the customer; measure results versus process (e.g., measure the level of skill demonstrated using a widget versus the number of days spent attending training sessions); have a regular frequency with which reports and measurements are done (e.g., monthly average failure rate); are simple to use; and are understandable. A third source finds that good metrics possess three characteristics, only one of which is shared with Beamon's and Buchheim's attributes; Evans and Lindsay (2002:464,466) agree with both Beamon and Buchheim that good metrics relate to the strategic goals and mission of the organization involved, but also state that good metrics are actionable and useful.

Table 3 summarizes the attributes of "good" metrics as described in the literature. The elements that are common among the research are illustrated with this presentation. Of the works shown in Table 3, six authors claim that metrics should relate to the organizational mission and strategic goals, five suggest that simplicity is an important quality of metrics, and five state that good metrics are meaningful to customers. Four authors also point out that metrics should be understandable and derivable from economically collectible data (i.e., cost effective). All other attributes in Table 3 are common among three authors or less.

Table 3. Common Attributes of Good Metrics

Attributes of Good Metrics	AFSC, 1991	Antanitus, 2003	Beamon, 1999	Brown, 1996	Buechlein, 2000	Cohen, 2003	Evans and Lindsay, 2002	INCLOSE, 1998	Kaplan, 1991	Keebler and others, 1999	Mentzer and Kondrad, 1991	Mulliken, 2001	Pinker and others, 1997	Rummler and Brache, 1995	Total Authors in Agreement
Accuracy								X	X						2
Actionable							X								1
Appropriate to each situation				X (change as situation or strategy change)							X				2
Avoid disconnects among goals, measures, and key success factors				X											1
Completeness								X							1
Consistency with organizational goals		X	X												2
Consistency with organization reward system											X				1
Cross-functional and up & down alignment				X								X			2
Defined sensor that gathers and records raw data					X										1
Defined unit of measure					X										1
Definition not ambiguous	X									X			X		3
Demonstrates a trend	X												X		2
Derivable from economically collectible data	X							X (cost effectiveness)		X			X		4
Drives the "appropriate action"	X									X					2

AFSC = Air Force Systems Command

INCLOSE = International Council on Systems Engineering

Table 3. Common Attributes of Good Metrics (continued)

Attributes of Good Metrics	AFSC, 1991	Antaxius, 2003	Beamon, 1999	Brown, 1996	Buchheim, 2000	Cohen, 2003	Evans and Lindsay, 2002	INCOSE, 1998	Kaplan, 1991	Keebler and others, 1999	Mentzer and Kondrad, 1991	Mililiken, 2001	Pinker and others, 1997	Rummler and Brache, 1995	Total Auditors in Agreement
Facilitates trust										X					1
Focus on past, present, and future				X											1
Focus on team vs. individual				X											1
Help with day-to-day issues		X				X									2
Illustrate how successfully organization's objectives and goals are being achieved through tasks and processes	X														1
Inclusiveness of all pertinent aspects			X								X				2
Incorporates both inputs and outputs of process										X					1
Linked to values, vision, and key factors of organization				X											1
Logical	X												X		2
Meaningful to customer	X			X	X								X	X	5
Measurability		X	X												2
Measures results versus activities					X										1
Measurements and reports made with regular frequency (i.e. monthly, weekly, etc)															1
Meets customer goals and values			X												1

AFSC = Air Force Systems Command

INCOSE = International Council on Systems Engineering

Table 3. Common Attributes of Good Metrics (continued)

Attributes of Good Metrics	AFSC, 1991	Antanius, 2003	Beamon, 1999	Brown, 1996	Buchheim, 2000	Cohen, 2003	Erans and Lindsay, 2002	INCOSE, 1998	Kaplan, 1991	Keehler and others, 1999	Mentzer and Koutrad, 1991	Mülliken, 2001	Pinker and others, 1997	Rumler and Brache, 1995	Total Authors in Agreement
Multidimensional										X				X	2
Numerically describe progress toward objective (quantitative)										X			X		2
Output-driven														X	1
Relate to strategic goals and mission of organization		X	X		X		X					X	X		6
Relevance (pertinent to desired end result)								X							2
Repeatable-repeatedly and quickly derivable	X							X					X		3
Research based targets or goals				X											1
Simplicity	X			X	X			X					X		5
Suggest corrective actions													X		1
Timeliness	X							X	X						3
Understandable	X				X					X			X		4
Universality			X												1
Useful							X								1
Visible										X					1

AFSC = Air Force Systems Command

INCOSE = International Council on Systems Engineering

Application of Metrics to Acquisition Reform Initiatives.

In order to create a framework for developing measures of success for corporate level Air Force acquisition initiatives, not only must it be understood how to create well-structured metrics, but it must be understood how those metrics can be applied to acquisition reform initiatives. Metrics can be used to track the progress of supply chain initiatives (Klapper and others, 1999). The supply chain is made up of all the activities relating to the transformation and flow of goods from the point of extraction of raw materials, through to the end users (Monczka and others, 2002:4). The military acquisition community manages and oversees the activities involved in the procurement of weapon systems, from initial development and procurement, through delivery to the warfighters, all the way to the end of a weapon system's life cycle when it is retired or sent to the "bone yard" at Davis-Monthan Air Force Base, Arizona; therefore, a supply chain perspective is appropriate for analyzing the weapon system acquisition and management process. Accordingly, metrics can be used to monitor the progress of acquisition reform initiatives.

Metrics appropriate for acquisition reform enable an organization to assess reform initiatives' effectiveness and implementation on both acquisition programs and the acquisition reform process itself (Pope, 1997:75-76). Groups within the DoD have proposed various metrics to measure acquisition reform; for instance, Pope (1997:57,75-77) notes that the Navy was working towards using metrics, such as the average cycle time for issuance of requests for proposals, to help gauge the use of some of their acquisition reform initiatives. But most acquisition metrics have been used for individual acquisition programs; for example, a specific acquisition program, like a program to buy

radios for an aircraft, might employ a metric like schedule variance to measure the percentage increase or decrease in the time it takes a contractor to deliver radios bought in one month compared to the delivery time of radios bought another month (Pope, 1997:75-77). No systematic approach to performance measurement or standardized set of metrics for acquisition reform initiatives currently exists (Beamon, 1999; Pope, 1997:75-77).

In an effort to address the lack of standardized metrics for acquisition initiatives, the Acquisition Reform Benchmarking Group (ARBG) was established by the DoD in 1996 to help measure progress within the arena of acquisition reform (Pope, 1997:34-35). Pope (1997:35) determined that the findings of the ARBG divide metrics into three levels: program, subordinate, and enterprise. Metrics at their most basic level measure elements within individual acquisition programs, or “little ‘a’” acquisitions, as Sambur refers to acquisitions at the program level (DiCicco, 2003). Subordinate metrics measure factors that feed into the highest level of metrics, which are enterprise metrics. Enterprise metrics measure the efficiency of overarching or generalizable processes that should be measured across the whole Air Force (Pope, 1997:34-35) (i.e., termed “big ‘A’” Acquisitions related metrics within this occupational community) (DiCicco, 2003). Enterprise metrics include cost, schedule, performance, and training metrics. The acquisition initiative this research focuses on pertains to “big ‘A’” Acquisitions and the metrics this research will recommend be used to assess that initiative are enterprise level metrics.

Pope (1997:26) found that metrics can also be categorized by the three types of activities that they measure, as defined by the 1995 Process Action Team (PAT) for

contract administration reform: go/no-go, activities, and behavioral changes. Go/no-go metrics show whether or not an activity has taken place. Activity metrics illustrate how extensively an action is occurring. And behavioral change metrics assess whether actions are creating the desired change in behavior or results. Part of the objective of this research is to help determine whether or not the use of the acquisition initiative of interest is an effective way to bring about the desired changes in the acquisition practitioners' behavior. Specifically, the acquisition practitioners who participated in this research were queried about whether the initiative of interest was the most effective way to get them to take the "clean-sheet" approach to acquisitions that the initiative was meant to encourage. Additionally, part of the metrics recommended by this research will fall within the behavioral change category. Now that a framework for building metrics has been established by reviewing metrics' importance, composition, creative steps, good attributes, and application to acquisition reform initiatives, that framework will be applied in a case study.

Summary

Acquisition reform initiatives have been born out of senior Air Force leaders' vision of a faster, better acquisition process and an improved relationship between the acquisition community and the warfighters they support. This research focuses on developing metrics for one such initiative. Many theories exist about what constitutes good metrics and what the steps involved in creating metrics are. A large part of the literature review and additional research for this thesis identify those theories and examine the commonalities among them. Using those recurrent elements, a model will

be developed for building acquisition metrics. The literature suggests that the metrics from the model should be systematically developed using three general steps: 1) create a foundation the metrics will be based upon (i.e., what the metrics are intended to focus on and be built from), 2) identify the critical elements that you want to measure, and 3) create specific metrics for those critical elements in order to improve the system's performance. According to the literature, the model's metrics should also have five attributes commonly found among good metrics: relatedness to the organization's strategic goals and mission, simplicity, meaningfulness to customers, understandability, and cost effectiveness (AFSC, 1991:2-1; Antanitus, 2003:11; Beamon, 1999; Brown, 1996:3-10; Buchheim, 2000:311; Evans and Lindsay, 2002:455,466; Keebler and others, 1999:118-121; INCOSE, 1998:9; Milliken, 2001; Pinker and others, 1997:193; Rummler and Brache, 1995:138). In addition, the literature indicates that it is preferred for metrics to be quantifiable, but that sometimes qualitative metrics more adequately discuss system performance; the choice between qualitative and quantitative depends on the nature of the subject matter being measured (Beamon, 1999; Locke, 1978:600). To better understand the applications of the model for broad use with any large acquisition initiative, a case study will be conducted by applying the model to the 2002 acquisition Lightning Bolt initiative "Focus on results, not process." Chapter three will discuss, in detail, the methodology to be used in this study.

III. Methodology

The goal of this research is to suggest a model for developing performance measures for corporate Air Force level acquisition based initiatives. Because this research is exploratory, it will focus on only one initiative: the 2002 Lightning Bolt initiative “Focus on results, not process.” To do this, interviews were conducted and the interview data were translated into metrics for the initiative. A qualitative analysis of the interview data was also done using a protocol based on those of Carter and Jennings (2002:145-179), Creswell (1997:142-146; 2003:196-215), Isabella (1990:7-41), and Leedy and Ormrod (2001:95,98,196). A variety of themes and patterns emerged from the interview data through the analysis. Subsequently, the level of success the Lightning Bolt initiative is having was also examined. From those results, metrics are suggested for application against the “Focus on results, not process” initiative and for broader, generalized use with any large acquisition based initiatives. A description of the interview process is provided below.

Methodological Overview

Based on the nature of the research question, a qualitative approach was used to guide the research project based on the procedures outlined by Creswell (2003:179-215). In the current qualitative research effort, data was collected through a series of semi-structured interviews (Creswell, 2003:210-215). After the interviews were transcribed, the transcriptions were broken down into statements and analyzed for common themes. Specifically, the interviews were designed to generate a list of metrics that can be used to

measure the Lightning Bolt of interest and determine the extent to which this Lightning Bolt is appropriately facilitating desired changes.

The qualitative study findings are envisioned to be reinforced by future, follow-on quantitative research that should support and further validate the qualitative findings, while expanding the analysis to a large representative sample. As part of the future quantitative research, these qualitative data will be translated into a questionnaire that can be used to evaluate the list of metrics generated and to gather more insight into the Lightning Bolt's appropriateness from a broader audience. The findings from both phases should be integrated as part of future research where the quantitative data will be used to reinforce and confirm the qualitative results. In the subsequent sections, the nuances of this methodology are explained.

Interview Sample.

In 2001, Acquisition Centers of Excellence (ACE) were established for the Air Force, Air Force Materiel Command, Air Force Product Centers, and Air Logistic Centers to lead acquisition reform efforts (New Acquisition Center Provides Warfighting Capabilities, 2001; Lightning Bolts, 2004). Part of their duties is to oversee the implementation of the Lightning Bolt initiatives. As a result, the ACE offices have helped system program office (SPO) leadership understand and implement the initiatives. Therefore, in this research, members at the ACE offices and various system program offices (SPOs) within the Air Force's Product Centers and Air Logistics Centers were interviewed. To further broaden the research sample, individuals holding various acquisition related positions within Air Combat Command, Air Force Space Command, and Air Staff were also interviewed. Modeling Carter and Jennings (2002:150), the

sample interviewed was chosen with the intent of getting a high degree of variation among managerial levels, in order to get a higher range or scope of data.

The ACE personnel were asked to identify interview participants, within the SPOs, who have experience with the 2002 Lightning Bolt initiative of interest. The letter requesting ACE office assistance in identifying interview participants is shown in Appendix A. The letter describes the target interview audience as consisting of 40-50 SPO members evenly distributed among the Product and Logistics Centers, holding various levels of managerial responsibility, and having experience using the “Focus on results, not process” Lightning Bolt. The letter also asks the Secretariat of the Air Force Acquisition Center of Excellence (SAF/ACE) office to utilize subordinate Center ACEs to identify interview subjects within this target audience who would then be contacted to participate in this research.

Of the fourteen Center ACEs queried for assistance by the SAF/ACE, two provided contact information for interview participants. The two respondent Center ACEs were from separate locations; participants from Acquisition Category (ACAT) one and two programs were identified at one location and from ACAT three programs at the other location. ACAT describes program size and dollar amount and ranges from one, being the largest and most expensive programs, to three, being the smallest and least expensive. Six Center ACEs gave negative replies (three of which were initially non-respondent, but gave negative replies when asked again) and cited several reasons why: individuals at their location had no experience with the initiative of interest; they sent a message out to SPOs asking for participants and got no replies back; due to the nature of the mission at their location (e.g., a test and evaluation organization) they did not use the

initiative of interest; they never received the request from the SAF/ACE asking for assistance with the research; and since their location was neither a Product nor Logistics Center (e.g., a Test Center), they thought the request for research assistance did not apply to them. Some Center ACEs cited more than one reason for their negative replies. The six remaining Center ACEs were completely non-responsive even after being queried a second time.

When the low Center ACE response rate was observed, it was realized that a broader interview sample was needed and that individuals with acquisition experience from Air Combat Command, Air Force Space Command, and Air Staff should be included among interview participants. Additional participants were identified with the assistance of the SAF/ACE, through interview participants recommending that other specific individuals be contacted for interviews (also referred to as ‘snowball sampling’), and through personal contacts of the researcher. A total of twenty five participants were identified and interviewed, but only twenty three interviews were usable; nineteen verbal interviews were successfully transcribed, two verbal interview recordings were inaudible and subsequently unusable, two interviews were recorded using only notes taken during the interviews, and two interviews were conducted via email.

Interview Correspondence.

Potential interview participants were identified and then contacted to determine their willingness to participate. Upon their agreement to assist with this research, participants were sent a formal invitation letter from the SAF/ACE office. This letter, displayed as Appendix B, explains that the research is designed to help develop metrics of success for the Lightning Bolt of interest. It also explains that any data gathered from

the interviews will remain confidential and that participants will not be identifiable. In addition, the letter contains a list of the interview questions. The interview questions were provided prior to conducting the interviews so that participants could prepare, in hopes of making the interviews more efficient and effective.

After interview candidates were identified and invited to participate, each was contacted via email or telephone to schedule an interview time. Prior to the scheduled interviews, each participant was contacted to confirm his or her availability for the interview. Then, the interviews were conducted face-to-face, over the telephone, and using email. Notes were taken during each verbal interview, and interviews were recorded and transcribed (with the interviewee's permission) whenever possible.

Appendix C is a global appendix of the additional exchanges that took place with interview subjects. A schedule reminder was emailed to participants to reiterate the time and date of each interview. The reminder also acted as a confirmation of participants' availability for the interviews. Also included in Appendix C is a copy of the interview script that was used. The script addresses the intent of the research to develop metrics for the Lightning Bolt of interest, and the assurance that the data collected during the interviews will remain confidential. The interview questions address subjects' views about: a) the purpose and goals of the "Focus on results, not process" Lightning Bolt initiative; b) metrics to be used to measure the successful implementation of the initiative; c) their role in the initiative's implementation; and d) support being received to implement the initiative.

Interview Method.

The interviews included open-ended items, allowing participants to go in different directions. However, in this research, a semi-structured interview approach was used in order to address the topics of interest about participants' use of the Lightning Bolt, within the interview time constraints. A semi-structured interview enabled the research to follow the standard questions in Appendix C while allowing the latitude to include a few tailored questions to probe or clarify a participant's reasoning. (Leedy and Ormrod, 2001:196)

Following Carter and Jennings (2002:152) and Leedy and Ormrod (2001:98), face validity of the interview questions has been assessed using several methods. First, the questions were reviewed by knowledgeable academicians and acquisition practitioners. Based on this expert review, redundant questions were removed; a few questions were reworded to prevent leading the participants and to make the questions more objective; and a few questions were added based on the reviewers' suggestions. Second, after ten percent of the interviews were conducted, they were transcribed and reviewed to determine whether themes were emerging and if questions were clear to participants; the interview questions were refined and adjusted accordingly. Interviewing is a dynamic process, so data was continually analyzed throughout the process and the interview questions adjusted as needed.

Analysis Technique

Data Analysis.

The qualitative data collected was analyzed using Creswell's (1997:142-146) data analysis spiral. Using this spiral, data was reviewed multiple times while going through the following steps:

1. **Organization:** Organize the data using a computer database. Break large portions of text into smaller units (i.e., sentence and individual words).
2. **Perusal:** Peruse the whole data set many times to get the big picture of what it contains as a whole. Write down potential interpretations and categories while perusing.
3. **Classification:** Identify recurrent themes and categories, and classify or group each datum accordingly. In this step patterns should begin to emerge.
4. **Synthesis:** Integrate and summarize the data. Develop propositions or hypotheses that describe categorical relationships. Create diagrams, tables, matrices, etc. to illustrate proposed relationships.

Validation.

Creswell (2003:196) suggests eight strategies for validating the accuracy of findings, three of which applied to the findings of this research. The first validation strategy employed is to clearly state the biases the researcher brings to the study and those that exist due to the nature of the research (Creswell, 2003:196). The following are potential biases. First, the self-reporting nature of interviews makes them inherently biased. Second, the interviews only look at a snapshot in time in terms of the participants' responses, meaning the data are transient in nature, so interview responses

may be different at different points in time (Leedy and Ormrod, 2001:95). Third, there could be a possible sample bias because participants are not being selected randomly. However, follow-on research could counter this bias by randomly selecting a sample that represents the population of Air Force acquisition practitioners.

Peer debriefing is the second strategy to validate the findings of this research. Experienced acquisition practitioners who are familiar with this area of research reviewed and asked questions about the qualitative portions of the research. This was done to help ensure the accuracy of the findings and to make the explanation of this research clearer for an outside audience (i.e., readers other than the researcher). (Creswell, 2003:196)

Following Isabella (1990:13) and utilizing Creswell's (2003:196) third strategy, external auditors were used to review the entire research project. As part of the qualitative data analysis, recurrent themes were identified and interview data categorized accordingly. Non-acquisition and acquisition professionals who were new to the research project were given a list of statements from the interviews and a list of the themes that emerged. These individuals were then asked to categorize the interview statements under the themes they thought were appropriate matches. The purpose of this was to see if the external auditors found that the same interview statements represent the themes as intended. The independent categorization provided by the auditors validates the classification and synthesis of the data. The external auditors assessed the project at the conclusion of the research process.

The qualitative analysis of the interview data, combined with the steps to create metrics and characteristics of good metrics that were revealed through the literature,

enable the building of metrics for the initiative of interest. The following sections describe what was gleaned from the literature.

Literature Findings

The literature reviewed for this research was used to identify a set of three generalized steps for creating metrics and a comprehensive list of desirable qualities for metrics. Table 2 and Table 3 (previously shown in chapter two) illustrate the way these steps and attributes were captured, respectively, the matrices of steps and attributes, and the authors who have identified the various steps and attributes.

Consolidation of Steps for Creating Metrics.

Methods for creating metrics suggested by multiple authors in the literature were compared to one another and searched for common elements. Similarities between the methods were merged into one generalized three step process for creating metrics. The three step method includes: 1) decide what is to be measured, 2) identify the critical aspects of the item to be measured, and 3) create specific metrics for each critical aspect in order to improve performance. The metrics suggested by this research will not only be developed using this systematic process, they will embody the attributes of good metrics.

Attribute Identification.

After all the literature was reviewed, the list of attributes identified was funneled down into a core set of five common attributes to eliminate redundancy. Attributes agreed upon by four or more authors are included in the core set. Those attributes include: relatedness to the organization's strategic goals and mission, simplicity, meaningfulness to customers, understandability, and cost effectiveness (AFSC, 1991:2-1;

Antanitus, 2003:11; Beamon, 1999; Brown, 1996:3-10; Buchheim, 2000:311; Evans and Lindsay, 2002:455,466; Keebler and others, 1999:118-121; INCOSE, 1998:9; Milliken, 2001; Pinker and others, 1997:193; Rummler and Brache, 1995:138).

Core Attributes.

The first dimension of good metrics to be measured is that they relate to the strategic goals and mission of the organization involved (Antanitus, 2003:11; Beamon, 1999; Buchheim, 2000:311; Evans and Lindsay, 2002:455; Milliken, 2001; Pinker and others, 1997:191). This relationship is important so the organization can determine if it is meeting its strategic goals, and so people within the organization will focus on what is being measured, thereby steering the direction of the organization (Beamon, 1999).

The second dimension is that the metric must be meaningful to the customer (AFSC, 1991:2-1; Brown, 1996:6; Buchheim, 2000:311; Pinker and others, 1997:193; Rummler and Brache, 1995:138). A metric is meaningful when it is something the customer cares about (Buchheim, 2000:311). And it must present data that enables action to be taken (AFSC, 1991:1-1).

The third dimension of good metrics is simplicity (AFSC, 1991:2-1; Buchheim, 2000:311; INCOSE, 1998:9; Pinker and others, 1997:193). Simplicity means that the metric must be as simple and logical as possible, so it will be easy to collect, analyze, and understand (INCOSE, 1998:9).

The fourth dimension good metrics need is that they must be derivable from economically collectible data (AFSC, 1991:2-1; INCOSE, 1998:9; Keebler and others, 1999:119-121; Pinker and others, 1997:193). An organization must decide if it is cost effective to collect data for each metric. The organization has to determine if they can or

cannot afford to collect the data, and if the data offers greater value than it costs (INCOSE, 1998:9).

The fifth dimension is that good metrics must be understandable (AFSC, 1991:2-1; Buchheim, 2000:311; Keebler and others, 1999:119; Pinker and others, 1997:193). When a metric can convey, with just a cursory level look, how it was derived and what exactly it is measuring then, Keebler and others (1999:119) say, it is easy to understand.

Now that the five core attributes have been defined, the data gathered from the interviews can be analyzed and metrics for the initiative of interest developed by using the three general steps for creating metrics and ensuring that the created metrics possess the good attributes.

Summary

A qualitative method approach has been used to conduct this research project. Data from the qualitative analysis was applied to the information gathered from the literature about the steps involved in creating metrics and the characteristics that good metrics are supposed to have, in order to develop metrics for the “Focus on results, not process” Lightning Bolt initiative. These four elements together, meaning the data from interview participants, the steps to creating metrics, the good attributes, and the initiative of interest used as a case study, build the framework for developing research based metrics for any large acquisition based program.

IV. Data Analysis

The focus of this effort is to create a framework for developing measures of success for corporate level Air Force acquisition initiatives. A four part framework has been suggested. Through the review of literature, common steps for creating metrics were established and recurrent characteristics of good metrics were identified. Then interviews were conducted with acquisition practitioners who have experience with the initiative of interest. Finally, those three parts will be applied to the “Focus on results, not process” Lighting Bolt initiative as a case study and metrics for the initiative will be suggested as a result. This chapter discusses data collected during the interviews and the subsequent analysis. Multiple patterns and themes were discovered during the qualitative analysis of the data. Chapter five will discuss the conclusions drawn from the analysis and recommend the implementation of several related activities. The following sections describe the data.

Interview Participants

Interviews were conducted with Air Force officers and Air Force government civilians from Air Combat Command, Air Force Materiel Command, Air Force Space Command, and the Air Staff. Individuals ranged in rank from GS-12s to Senior Executive Service (SES) members and General Officers. Participants held a variety of positions from System Program Office (SPO) level program managers, contracting officers, and division chiefs, to Program Executive Officers (PEOs) and Center Commanders, to Secretary of the Air Force staff level positions (i.e., Assistant Secretary of the Air Force for Acquisition (SAF/AQ) related positions). Their time in federal

service ranged from five years up to thirty one years. The high degree of variety in participants' managerial levels and areas of expertise provided a high range or scope of data (Carter and Jennings, 2002:150).

For purposes of maintaining participant confidentiality, GM-15s, GS-15s, and Senior Executive Service members (excluding those within the Air Staff), and System Program Directors, Program Executive Officers (PEOs), and Center Commanders who participated in this research will be categorized as "middle management." Interview participants referred to this grouping of people as middle management, to Assistant Secretary of the Air Force equivalent positions and above as "senior leadership," and to Deputy System Program Director equivalent positions and below as "SPO level workers." Note that most middle managers, and some workers, are actually relatively senior, experienced personnel; the categories are essentially a self-classification by the participants of their positions relative to other participants' positions.

Analysis Overview

Modeling Isabella (1990:13), when the data collection was completed, interview participants' responses to each interview question were systematically and carefully examined to identify both recurrent and unique themes. Every interview transcript was reviewed and sections of the interviews were excerpted verbatim and typed on separate pieces of paper to illustrate the nucleus of each individual's statements (Isabella, 1990:13). After excerpts were perused, as part of Creswell's (2003:142-146) data analysis spiral, they were classified into recurrent themes and categories. Isabella (1990:13) refers to this as coding into final categories. Roughly seven hundred excerpts

were recorded. Category coding accuracy was ensured using external auditors (Creswell, 2003:196; Isabella, 1990:13). Representative examples of data (i.e., interview excerpts) were given to independent reviewers, or external auditors, including acquisition practitioners and non-acquisition practitioners new to the research project (Creswell, 2003:196; Isabella, 1990:13). The reviewers were then trained in the rationale used for coding excerpts into categories (Creswell, 2003:196; Isabella, 1990:13). Due to the large number of total interview excerpts, reviewers were given a limited number of excerpts to code. In one such instance, reviewers were asked to code seventy eight excerpts about what metrics should be used for the initiative of interest and they classified fifty six excerpts into the same categories as the researcher, giving a seventy two percent level of agreement (Creswell, 2003:196; Isabella, 1990:13). Reviewers' results provided reasonable verification of coding procedure accuracy (Creswell, 2003:196; Isabella, 1990:13). The patterns and themes revealed through this coding are described below in greater detail for each interview question. As the focus of this research is developing measures of success for acquisition initiatives, the themes and patterns that emerged from the interview questions directly pertaining to metrics for the initiative of interest will be addressed first and the findings from the remaining interview questions discussed thereafter.

Suggested Metrics to Measure the Success of "Focus on results, not process"

Initiative Implementation.

Two interview questions directly addressed metrics for the initiative of interest. Interview participants were asked what metrics they would use to measure the results the initiative was meant to bring about, and then later in the interview participants were

asked how they would know if they were succeeding at implementing the initiative. Out of participants' responses, five main categories of metrics were recurrent: schedule, customer satisfaction, cost, performance, and credibility.

The theme most identified by participants was schedule. Schedule, also called an acquisition program baseline, refers to the lengths of time a program has set to accomplish various tasks. Based on participant responses, the category of schedule also includes a sub-category of cycle time, meaning the length of time from identifying a need for something until it is delivered. One way to classify cycle time is by whether it is oriented around capability or around documentation. Capability based cycle time refers to the amount of time between the warfighter stating his need for a new capability (e.g., being able to detect enemy troop movements within buildings) and that capability is being delivered (e.g., an infrared sensor is installed on an aircraft). Documentation based cycle time refers to acquisition lead-time or the time it takes to complete a document related activity (e.g., the time it takes for a contract to be negotiated until the legal document is signed by the parties and processed out). This theme is directly related to Sambur's (Senate Armed Services Committee, 2002:¶11) call for improved speed; the acquisition community has to deliver things when they say they are going to deliver them. Seventy four percent of participants identified schedule as a metric category for the initiative of interest.

Customer satisfaction with the product, process, or service being provided was the second most frequently named metric category. In the participants' view, customer satisfaction also encompasses a sub-category of expectation management. A large part of how satisfied the customer is depends on whether they received what they were

expecting. Sixty one percent of participants named customer satisfaction as a metric category.

Cost was the third most identified theme. This theme is self explanatory; it deals with activities related to money. This theme occurred among thirty nine percent of participants.

Performance was the fourth most recurring theme for these interview questions. It refers to how well or how poorly a product, process, or program is performing compared to program specifications and customer expectations. Both customer satisfaction and performance address expectations; of the two, performance is the more direct comparison against expected capability, and customer satisfaction addresses a more comprehensive assessment of all customer expectations. Twenty six percent of participants suggested metrics that fit into this category.

Credibility was the fifth category of participant interview responses. Credibility for the acquisition workforce would mean that their customers, mainly the warfighters, would believe what they tell them and find them trustworthy. This also ties in with Sambur's (Senate Armed Services Committee, 2002:¶11) call to improve credibility; the acquisition community has to deliver what they say they are going to deliver. However, the occurrence of this theme among only seventeen percent of participants does not seem to support Sambur's push for improved credibility; this indicates that not many people see measuring credibility as a way of telling if this initiative is succeeding. In contrast, the frequent recurrence of schedule among seventy four percent of participants does offer support for Sambur's call for speed.

The remaining interview excerpts for these questions that did not seem to fit into a particular category were placed in a miscellaneous category. Following Isabella's (1990:13-22) example, Table 4 displays representative excerpts from responses to the interview question "What metrics would you use to measure those results or outcomes?" and illustrates how responses flowed across each of the five categories described above. Table 5 displays the same information as Table 4 for to the second specific metrics related question of "How would you know if you are succeeding at implementing the initiative?".

The rest of the chapter discusses themes that emerged from answers to the remaining fifteen interview questions. These additional questions pertain to areas of supplemental interest to the sponsor of this research project, and some are related to the development of generic acquisition initiatives. The conclusions and recommendations reached from the data analysis will be discussed later.

Table 4. Interview Excerpt Categorization for Suggested Initiative Metrics

Schedule	Customer Satisfaction	Cost	Performance	Credibility
<p>I would say that in the acquisition business and the major weapons system acquisition business and even if we're talking in terms of hardware and what not and maintenance and sustainment kind of things, it's the customer who identifies the level of satisfaction. And it's the customer whose opinion of success that we need to focus on.</p> <p>Have mutually agreed upon expectations of what programs are to deliver so that if you had separate interviews w/ ACC & AFMC counterparts on expectations you should get the same answers</p> <p>the sooner we can get this capability or this enhanced capability into the war fighter's hands, the better it is for the war fighter. So that's one measure.</p> <p>come up with indicators along the way that give you a comfortable feeling that your cycle time's gonna be re --- shorter and yet it gives you some measurable things you can do in the middle to get there</p> <p>See if program is sticking to its Acquisition Program Baseline</p>	<p>I think you already have good metrics in cost and schedule... I think just obtaining your schedule to the cost that's been built into the schedule is --- is a pretty good metric into itself.</p> <p>I think you already have good metrics in cost and schedule... I think just obtaining your schedule to the cost that's been built into the schedule is --- is a pretty good metric into itself.</p> <p>cost, schedule, performance metrics we know how to measure programs once we're executing them</p> <p>if we're closer to our cost -- you know, if closer to on budget</p> <p>You want to look at, you know, a basic return on investment. Were you able to give at least as much out of your money as you thought you were going to get. Is your benefit for doing this thing as good as you thought it was going to be.</p> <p>And another criteria that I would use is how well has it been accepted by the user... You know, managing user expectations is a large part of that.</p>	<p>I look at the -- what's drivin' the problems. I do MARs, Monthly Activity Reports, how many reds and yellows</p> <p>cost, schedule, performance metrics we know how to measure programs once we're executing them</p> <p>Sometimes I see organizations that use metrics just to have metrics and they really don't mean anything. So you have to really take a look at what the metrics mean that we provide</p>	<p>we're lookin' at credibility. Are we delivering when we say, reports -- delivery -- on the contract, that says I'm gettin' there and am I havin' --- ?</p> <p>Are we making the decisions to stop programs when it's known they're not going to give what they claimed they'd deliver?</p> <p>Sometimes I see organizations that use metrics just to have metrics and they really don't mean anything. So you have to really take a look at what the metrics mean that we provide</p>	

Table 5. Interview Excerpt Categorization for Measuring Initiative Implementation Success

Schedule	Customer Satisfaction	Cost	Performance	Credibility
I deliver things ahead of schedule, under costs and the war fighter says this is exactly what I want and he gives us a thank you.	I deliver things ahead of schedule, under costs and the war fighter says this is exactly what I want and he gives us a thank you.	I deliver things ahead of schedule, under costs and the war fighter says this is exactly what I want and he gives us a thank you.	Making urgent and compelling requirements to support the GWOT and staying within legal parameters.	Well, I look at the Selective Acquisition Reports 'cause I have to report ___ schedules to Congress every year with my major programs, and I'm makin' the dates I promised. That's credibility. Am I doing it within the costs?
how well the program is doing in terms of meeting cost, schedule, and user performance requirements	I need to establish some sort of baseline of expectations that you have. If I don't do that, then you always have in your mind what you think I should be living up to and I always have in my mind what I think I can live up to, and unless you force that at the beginning to be mutual, then all you have is a latent disappointment in the program.	how well the program is doing in terms of meeting cost schedule and user performance requirements	how well the program is doing in terms of meeting cost schedule and user performance requirements	Have a user who thinks the acquisition community is credible and trustworthy
cycle time is -- is kind of a key thing to look at	I think that you -- you know that you're succeeding and implementing an initiative when you don't have a bunch of complaints from your customer. You don't have a bunch of complaints from your operator and your users.			

Meaning of 2002 Lighting Bolt “Focus on results, not process” Initiative.

Interview participants were asked what they thought the initiative of interest meant. Interview participants included individuals who helped to draft the initiative, one of whom stated the following about what the initiative was intended to mean:

Too many people within the acquisition community focus on completing processes (reports, assessments, checklists, etc). The Lighting Bolt aimed to cause people to look at the result intended by the process and to make a judgment of whether the activity planned actually furthers the opportunity for success. Success isn't getting through the process – its delivering a needed capability to the warfighter!

A variety of responses were provided by participants and then grouped by the themes that emerged. The main themes that emerged are listed below in order of how frequently they occurred, from highest to lowest. For several interview questions, some excerpts applied to more than one category or theme (see, for example, excerpts within the categories of Table 4 and Table 5). And when relevant and necessary for clarity, more than one excerpt was selected from a participant in order to capture the nucleus of their response and in order to reflect how adamantly they responded to the interview question (i.e., they stated their response to an interview question multiple times, with differing explanatory nuances in each response); this explains why excerpt frequency counts are higher than the number of participants in several of the following sections. For example, the first theme that arose for this interview question was from ten excerpts shared among ten participants, while the second theme came out of nine excerpts from eight participants, and the other themes occurred among four participants or less. Appendix D summarizes descriptive statistics for each theme.

- Focus on the end customer not the acquisition process itself; support the customer

- Does what we are doing make sense and does it add value? If not, get rid of it or waive it; remove the unnecessary steps
- Freeing people up
- Focus on getting the product out; effects based or outcome based acquisitions
- Want results not just process
- Clean-sheet approach
- The initiative has little meaning and little use
- Sets the stage for spiral acquisition and evolutionary acquisition
- Risk management
- Process must serve results
- Changing people's mindset to look at what they can do versus what they cannot

Desired Results or Outcomes of Initiative.

Next, participants were asked what they thought were the desired outcomes or results that the initiative was trying to accomplish. Multiple themes were identified from the interview data, the first of which occurred within eleven excerpts among nine respondents, the second from ten excerpts between eight respondents, and the remainder from five excerpts among four respondents or less. The following are the themes for this question in order of frequency. Included in Appendix D is a summary of descriptive statistics for each theme.

- Support the Agile Acquisition strategy; provide capability in a timely way without getting bogged down in the processes
- Change people's way of thinking; be creative, innovative, and use common sense
- Get people to think about the outcome not the how
- Promises made, promises kept
- Roadblocks exist to accomplishing initiative outcomes from 1) middle management, 2) SAF/AQ staff and other services, and 3) contracting
- Unchain the process and make bureaucrats look at the big picture
- Goals are unclear
- Challenge decision makers when necessary; risk management
- Freeing up the workforce, empowering them

Appropriateness of Initiative Goals.

Participants were also asked if they thought the goals of the initiative were appropriate. One of the authors of the initiative described the goals, or outcomes, of the initiative in the following way:

... it's from Secretary Roche, General Jumper, Dr. Sambur and at the time, General Lyles, Materiel Command Commander, all endorsed the speed and credibility as the two primary outcomes that they wanted from this -- from the work force and the acquisition system and it was this Focus on Results, Not Process Lightning Bolt which attempted to write a policy on how we do business that -- that does that. The outcome is the result itself, not the process.

Based on their understanding of what they thought the goals or outcomes of the initiative to be, twenty of the twenty three participants stated that they felt the goals were appropriate. However, when asked if they felt using this initiative was the most appropriate way to accomplish the goals that it was meant to accomplish, several participants offered various criticisms of the initiative. A few of those criticisms are listed below.

One middle management participant said:

... Well, they posted these lightning bolts, but they didn't give me background behind them. I mean, what is the motive for this? Sometimes just because you put something out, clear, in black and white print, unless you know what the under-pinning motive is behind it, everyone will enact upon it differently.

Another middle management participant stated:

... At the time of the Lightning Bolts - as long as Mrs. Druyun was the champion, you could roll over the bureaucracy. When she wasn't, there wasn't any institutional memory to show why or how you could have waived things...

And one SPO level worker remarked:

... It's got to be more than just saying, you know, this is a Lightning Bolt and we want everybody to follow it.... It has to be a top down mindset change, you know. It has to have the support of the senior leaders. It has to be harped on over

and over and over again, this is the sorts of things that we're trying to do... And you can't just leave it for the -- the actual day-to-day employee to overcome the inertia of things the way they've always done it... And there's a couple reasons for that. One, it's just inertia. Two, it's because people are afraid of getting squashed if they do something and it doesn't work... One of the things that -- that we have to be real careful about is -- is punishing failures because you can't come up with new things unless you try things and fail from time to time.

Most Important Aspects of the Initiative.

The interview participants were then asked what they considered to be the most important aspects of the “Focus on results, not process” initiative. Four main themes were identified within the data and were close in frequency of occurrence among participants. Organizational culture was the most recurring theme; nine excerpts from six participants reflected this theme. Participants stated that an entrepreneurial mindset was the next most important aspect which includes, but is not limited to, becoming creative, not being risk averse, taking bold steps to challenge the status quo, and thinking differently. Seven interview excerpts among seven participants noted this aspect. Responsiveness to the customer was the next most frequently seen theme with six excerpts among five participants. Lastly, five excerpts from four participants shared the theme of communication. Appendix D includes summary descriptive statistics for each theme.

How Participants Heard about the Initiative.

Next participants were asked how they had actually heard of the initiative. Four participants said that they had not heard of the “Focus on results, not process” concept as a formal initiative until they were contacted about this research project; but, based on their interview responses they had actually already been carrying out the intent of the initiative within their jobs. Those participants included two SPO program managers, a

Deputy SPO Director, and an Air Staff member. Among those participants who had heard of the initiative, the sources from which they learned of the initiative were varied. The most frequent source of introduction to the initiative was through participants' chains of command and normal information distribution channels; seven excerpts from seven participants shared this theme. The next most recurring theme was direct involvement with Druyun, the originator of the initiative. Six excerpts from five participants shared this theme. Three excerpts from three participants noted direct contributions to writing the initiative. And the three remaining themes observed from single excerpts among individual participants were acquisition reform training, Sambur's (Department of the Air Force, 4 February 2003) letter to the acquisition community introducing the initiative as part of the new push for improved speed and credibility, and working in an Acquisition Center of Excellence (ACE) office. Appendix D summarizes the descriptive statistics.

Next Step in "Focusing on Results".

In addition to being asked to explain how they had heard about the initiative, participants were asked what the next step should be in order to get the acquisition community to actually implement the objectives of the initiative and really focus on the results. There were as many responses to this question as there were interview participants. The most frequent theme within the interview responses for this question was seen within six excerpts shared among four participants. The second most frequent theme came from six excerpts among three participants. The next two most frequent themes were seen in three excerpts from three participants. All of the other themes were shared by only two participants or less. Those themes, summarized in Appendix D, are as follows:

- Change the acquisition workforce culture
- Apply the initiative to the processes that support Evolutionary Acquisition
- Training and education
- Expectation management with the warfighters and Air Staff, and in turn Congress
- Stop smacking people's hands for doing acquisitions differently than it has always been done
- Corporate buy-in across oversight organizations within the Air Force and the Department of Defense
- Senior Air Force leadership buy-in
- Provide examples of specific success stories
- Road shows
- Be specific about what constitutes "results"
- Move people from oversight to execution roles
- Take people out of the approval chain who are not in the decision chain
- Bust roadblocks
- Improve filtering down of initiatives; initiatives lose a lot of punch by the time they get to the SPO level workers
- Release a new set of initiatives on a more practical and specific level
- Obtain feedback from the troops
- Look at how we make acquisitions work in the future
- Include demonstration of initiative implementation as part of appraisals
- Send out messages about when programs and people failed, but were still rewarded for trying and being innovative
- Set a standard or cut-off point where failing programs are turned off
- Get people willing to take risks
- Obtain buy-in from functional and operational communities
- Follow through

Organization Implementation of the Initiative.

After stating what they thought would be the next steps to take in order to get people to accomplish the goals of the initiative, participants were asked how their organizations were implementing the initiative. The themes from the data describing organizational use of the initiative are listed below. The most frequent theme incorporates seven excerpts from five participants who are members of various Acquisition Center of Excellence (ACE) offices; the second most frequent theme was from seven excerpts among three participants; and the third most frequently occurring

theme was shared by four excerpts from four participants. Most of the themes that emerged were only common among one or two participants. See Appendix D for a summary of descriptive statistics for each theme.

- ACE offices assist programs to challenge burdensome processes and try to influence people to use the philosophy of the initiative
- Stress full participation of Integrated Product Teams (IPTs) and ensure IPTs include the warfighters, contractors, and contracting officers
- Rewrote Air Force Instructions and Air Force Federal Acquisition Regulation Supplements and other guiding documents to free up people
- Negative replies about not using the initiative
- Opportunity management; being proactive versus reactive, being creative, and using risk management
- Challenged SPO members to use common sense, and then if it is not the law and does not make sense to break it
- Ensured Requests for Proposals and proposals are outcome based
- Developed and implemented training on using the initiative
- Applied initiative as appropriate to SPO programs
- Used internal teamwork to change SPO mindset from no unless you can prove yes, to yes until a roadblock is found that says it cannot be done
- Empowered SPO program leads, lessened emphasis on functional leads; removed non value-added parts of the chain of command

Most participants indicated they were implementing the initiative in some way, but several said they were not. Most notably, several middle management participants said they were not actively implementing the initiative because from their perspectives Air Force Materiel Command is now more process oriented than product oriented. They are even being sent to lecture series and workshops by Michael Hammer on how to specifically use and reengineer processes with the idea, as some participants noted, that by so doing they will later be able to focus on the results. Hammer is a New York Times bestselling author, credited with creating the concepts of reengineering and process enterprise (Hammer, 2001:i). Another participant stated that they would not remove non value-added acquisition processes because they would not challenge the Federal

Acquisition Regulation without a lawyer. And one other participant said they were having difficulty implementing the initiative.

Participants' Roles in the Development or Implementation of the Initiative.

Not only were participants asked how their organizations were implementing the initiative, each participant was asked what his or her specific role was in either the development or implementation of the initiative. The most recurring theme was that participants acted as enablers for their teams. Those enabling activities included but were not limited to the following: challenging their teams to use the initiative; running interference for their teams when their attempts to implement the initiative met resistance; massaging relationships (i.e., developing and maintaining a good working relationship) with people involved with the acquisition processes to which they were trying to apply the initiative and making sure things were running smoothly. The theme of being an enabler was formed from fourteen excerpts among eight participants. All other themes came from three excerpts from three participants or less. The themes, also summarized in Appendix D, are listed below.

- Being an enabler for your team
- Developer or author of the initiative
- Endorser and advocate of the initiative
- Had no role in the development of the initiative
- Provide advice to senior leadership on ways to implement the initiative
- Helped rewrite policies as a result of using the initiative
- Provided training for SPOs on how to use the initiative
- Managed customer expectations
- Architect for implementation of the initiative within a SPO

Support for Organizational Implementation of Initiative.

After participants were asked about their roles in the development and implementation of the initiative, they were asked several questions about the level of

support they are receiving in their attempts to implement the initiative. The first of these questions asked what kind of support participants' organizations were getting as they try to use the initiative. The most recurring theme that was seen in responses to this question came from eighteen excerpts given by thirteen participants. The other themes were expressed in three excerpts among three participants or less. The themes about types of organizational support are listed below in descending order of frequency of occurrence.

- Top down support
- ACE help in planning for program events
- Contractor support
- Initiative training; risk management training and Discovery Map training
- Being left alone and trusted to go implement the initiative is the best support
- Internal support
- Congressional language can be a big supporter

However, several negative themes about the level of support organizations were receiving arose from the responses of seven participants.

- No support is being given
- The bureaucracy is fighting implementation of the initiative
- Senior leaders empowered the workforce to go out and implement the initiative, but they are not preaching it enough themselves; need strong, consistent advocacy
- Headquarters puts the initiatives out but does not have to live with them

Appendix D summarizes both the positive and negative themes raised in responses to this question.

Support for Individual Implementation of Initiative.

The next support related question dealt with whether or not they felt they were getting the support they needed to implement the initiative. Over sixty five percent of the participants said they were receiving the support they needed to implement the initiative from those within their chain of command and from those areas within their control.

However, thirty percent of participants said they were not getting the support they needed from those who are outside of their chain of command but can still influence their ability to implement the initiative. Five percent of participants were undecided. Participants noted that they were not getting support from Headquarters Air Force (HQ USAF), Air Staff, or the Office of the Secretary of Defense. They cited the need to have a constant push from senior Air Force leaders in order to implement the initiative. For example, one participant said:

... where I don't have the support is the stuff that the senior people need to do, they aren't doing enough. I mean, they -- they just -- they -- they're distracted by day to day tactical problems of running the Air Force to the point where -- where if they have some time, they'll do transformation stuff, but they -- I -- I just get the sense that they don't get that without them involved on a -- on a almost daily basis, the -- the -- the forces against change just are so strong that they'll -- they figure they can wait it out.

While another participant noted what senior leaders could ideally do to provide support:

... in my ideal world, Chief of Staff of the Air Force would -- would, you know, come out and once a month, he'd have some speech on why performance based contracting or results based acquisition is critical to the success of the Air Force. And every time an issue came up that dealt with contractors or acquisition, we'd have a consistent message on that.

The need for consistent, repeatedly vocal support from senior Air Force leaders and the need for buy-in from people and processes outside of the immediate Air Force chain of command that can still heavily impact people's successful implementation of the initiative continue to be recurring themes.

Organizational Support for Individual Implementation of Initiative.

Participants were also asked how their organizations were supporting them in their attempts to put the initiative into action. The theme of support and encouragement being provided by leadership within participants' direct chains of command was noted

among twelve excerpts from eleven out of twenty three participants. Three other participants, including two middle management members, said they received support from their organizations by being trusted to do the job and being left alone to do it. Three excerpts from one participant called out strong support from the ACE offices as an avenue of organizational support. Another participant said they were getting support from their organization by virtue of having no kick-back from SPO members which indicated that the SPO members have accepted the challenge for their organization to implement the initiative. The final theme that arose out of excerpts for this question was from a participant who twice stated that they were not seeing leaders at the Senior Executive Service (SES) and General Officer level engage enough in the drive to use this initiative; the participant considers leaders' involvement to be one of the most important tools they need to do their job. See Appendix D for a summary of descriptive statistics for each theme.

Initiative Implementation Success Stories.

After participants were asked about the level of support they were receiving in their attempts to utilize the initiative, they were asked if they had heard of any success stories or failures at using the initiative. Ten of the twenty three participants said they could cite no specific examples of success stories, but eleven other participants did provide examples of what they considered to be successes. The success stories were grouped into two categories: process level successes and program level successes.

Process level successes are examples of ways the initiative of interest has been used to remove non value-added processes and which can be repeated within program offices across the entire Air Force. One such example, as noted by one participant, was

the addition of a source selection plan into a System Acquisition Management Plan in order to get approval for both at the same time. Another participant discussed the incorporation of a Price Competition Memo (PCM) in a Proposal Analysis Report (PAR) which reduced time because now the same pricing structure can be used for both the PAR and PCM.

In another process level success story, a participant was trying to purchase desktop computers and related software to be used in an Air Force office and was told through their contracting approval chain that the base lawyers said a Mission Need Statement (MNS) and Operational Requirements Document (ORD) would be needed due to the dollar threshold of the computer purchase. The participant's office challenged the requirement for the MNS and ORD because it did not make sense since the purchase was just for office computers. Their challenge was successful and the requirement for the MNS and ORD was done away with. That challenge process took about three days and saved them six months of work had they been required to do the MNS and ORD.

Another example of putting the initiative to work involved a reduction in training approval time. An office was taking thirty to forty days to get training classes for their acquisition workforce. The process was examined and it was discovered that training notifications were being held up significantly by base training officers who were not directly involved in approving the training, but who merely wanted feedback to track who was going to training. As a result, the process was changed by removing the non value-added steps and base training officers now get feedback on people who attend training on the back end (i.e., after the approvals have been made they receive computerized tracking

information at the same time people are notified of their training approval), and training notifications are computerized and now have a twenty four hour turnaround.

Additionally, a participant stated that the delegation of contract approval authority down to various base level personnel, so that people now rarely have to go through the headquarters for contracting (i.e., SAF/AQ and SAF/AQC), is also an initiative implementation success story. Non value-added steps were removed and people not essential to the approval process were removed from the decision chain of command.

In addition to process level success stories, several weapon system programs were recognized by participants as examples of how the initiative can be utilized successfully. One such program is the Crystal Modification Program. The organization running that program was able to go and influence the Army and Navy to combine functionalities of boxes where it made sense to do so and reduce the footprint, and, in turn, reduce the development costs and infrastructure costs. The focus remained on the product and non value-added steps were eliminated. According to participants, reducing the footprint of the cryptographic systems required across the Department of Defense (DoD) is a success story that saves the DoD money and gets capabilities met more effectively and more efficiently.

Several other programs were also identified as success stories because of how they kept their focus on the results being delivered to the warfighters and how they did not get bogged down in the acquisition process itself. Programs like Global Hawk, Micro Impulse Radar, Patient Support Pallet, and the weaponization of Predator are additional examples that participants considered success stories of how the initiative of interest can

be used. However, one final program was considered to be a story both of success and of failure, namely the ChemSentry Chemical Detector program.

One hundred ChemSentry Chemical Detectors were purchased as Commercial-Off-the-Shelf equipment in January 2003. According to participants, this buy was made to support warfighters in Operation Iraqi Freedom and was called the “best of agile acquisition” by the Aeronautical Systems Center Acquisition Executive. Many of the traditional contracting processes and testing procedures were streamlined to get the product out to the field quickly. The chemical detectors put out in the field were not completely tested, but they were fielded very quickly to meet an urgent need and they did give some level of protection (better than essentially no protection at all). Several interview participants considered this to be a success story in the sense that the program was able to get an increased level of protection in the hands of the warfighters out in the field. Prior to fielding the detectors, troops were using chickens to detect chemical and biological warfare; during air attacks chickens were put outside to see if they died or not to tell troops if a deadly agent was present. This was one more example of a program level success story of initiative implementation. In contrast, the follow-on ChemSentry buy was considered to be a failure at using the initiative.

Initiative Implementation Failures.

Forty three percent of interview participants indicated that they had not heard of any specific examples of failure at using the initiative, though several did identify program level and process level failures. As noted above, however, some participants said the ChemSentry program failed in its attempts to use the initiative during the follow-on buy of one hundred additional chemical detectors when agencies outside of the Air

Force became involved. When the Army, who managed the chemical detectors previously used by the Air Force, became aware of the new ChemSentry purchase and fielding they performed an independent assessment of available chemical detectors and recommended that the old type of chemical detector be used to fill the Air Force requirements instead. Due to the Army's involvement, and subsequently that of the Office of the Secretary of Defense (OSD), additional testing of the detectors was required, the program was forced to go through the burdensome and lengthy steps of the traditional acquisitions process, and leadership became risk averse and did not support the use of the initiative. The participants said the program is now likely to be discontinued.

In addition to the ChemSentry Chemical Detector program, two other programs were said to have failed at implementing the initiative. Two middle management members interviewed noted that the F/A-22 aircraft program was an example of a failed attempt to use the initiative. And another participant described the increase in manpower requirements by the Program Executive Officer (PEO) offices, recently relocated to the Air Force Materiel Command Product Centers, over their previous manpower levels used while located at the Pentagon as a failure at implementing the initiative of interest.

Failures at using the initiative were also discussed at the process level.

Examples of process level failures at initiative utilization were noted by two participants. One participant discussed how the Air Force's process for reprogramming funds, which allows money to be used for programs other than what it was originally slated for, does not enact the initiative. The impression among the Air Force workforce is that Congress is why it takes too long to approve reprogramming. The participant's

office checked and found out that Congress only takes thirty of the hundred and fifty-eight day cycle to reprogram funding; the rest is taken up by the Air Force. So if money has to be reprogrammed above certain approval thresholds, it takes an average of a hundred and thirty days just to process the request through the Pentagon.

The other process level failure example involved an attempt to do a zero baseline of all work in a SPO at Electronic Systems Center. This exercise was originally designed to challenge the value-added contribution of every activity that the program office was doing by forcing each activity and report to justify its contribution. SPO personnel were not interested in doing it. This was clearly a failure at implementing the initiative. After participants were asked about successes and failures at using the initiative of interest, they were asked questions about acquisition reform initiatives in general.

Being Successful at Implementing Any Acquisition Reform Initiative.

The last two interview questions were applicable to acquisition reform initiatives on a broader scale. The first of these two questions asked participants what they think it takes to be successful at utilizing any acquisition reform initiative. A range of themes emerged from their responses. The most frequently occurring theme was seen among eleven interview excerpts from seven participants. The second most frequent theme came from seven excerpts among seven participants. The third most frequent theme was common among five excerpts from five participants. And the fourth most common theme was from six excerpts among four participants. The remaining themes arose from four excerpts among three participants or less. All of the themes about what it takes to make any acquisition reform initiative successful are summarized in Appendix D, and listed below in order of decreasing frequency of occurrence.

- Consistent message from the top
- Senior leadership buy-in; support and advocacy for initiative from senior leaders
- Be very specific in what the initiative says and in what is expected of those who use it
- Behavior of leaders has to reinforce philosophy behind the initiative
- It takes time to successfully implement an initiative
- Non-acquisition perspective; initiative should be written for a broad audience and by individuals with more than just an acquisition background
- Equip people to use the initiative; teach people about the initiative, train them to use it, provide them with the resources to implement it
- Buy-in from middle management (i.e., GM/GS-15s, Senior Executive Service members, System Program Directors, Center Commanders, and PEO level leadership)
- Marketing; show people in the acquisition trenches how the initiative will make their jobs better, more effective and efficient, and how it will help the warfighters
- Buy-in from people in the acquisition trenches and their desire to succeed
- More than just support; teams have to be pushed to change
- Teamwork
- Hold people accountable
- Focus on changing the acquisition culture
- Downplay buzzwords like “acquisition reform;” those words are overused and people outside of Product Centers think they do not apply to them
- Ingenuity because one size initiative does not fit all programs
- Trust of leadership
- Leadership from program managers not functional leads
- Freedom to use common sense
- Empowerment
- Reality based acquisitions management
- Enthusiasm
- Buy-in from operational leadership
- Communication

Important Elements of an Acquisition Reform Initiative.

Lastly, after interview participants were asked about what they considered to be the keys to successful initiative implementation, they were asked what was important to them in any acquisition reform initiative. Many of the themes that emerged from the data mirrored the characteristics of good metrics found within literature. The most recurring

theme was from six interview excerpts among five participants. The next three most recurring themes were each common among four excerpts from four participants. The other themes produced came from five excerpts from three participants or less. Each theme about what is important in an initiative is summarized in Appendix D, and listed below in order of decreasing frequency of occurrence.

- Focus on the mission of the Air Force and getting something to the warfighters
- Be beneficial to the acquisition grunts and the end users
- Makes sense
- Follow through; see it through to the end
- Do not make initiatives just so they are easy to measure, they should be useful
- Knowing the motive behind the initiative; seeing how it fits into the big picture
- Expectations management
- Improves performance
- Clearly defined; it is communicated well with examples
- Buy-in for it from all levels
- Leadership and advocacy for the initiative
- Frees people up to innovate
- Understandable
- Provides specific plan
- Cannot be restrictive
- Culture changing
- Does not lose what is good about current efforts
- Attacks other than on the margin (i.e., it attacks funding stability, requirements stability, expectations management)

Summary

After the interview data were carefully examined using methods modeled after Creswell (2003:142-146,196) and Isabella (1990:7-41), excerpts from participants' responses that represented the core of their answers to each question were grouped by the themes that emerged. Appendix D visually summarizes the details about each theme that this chapter describes; it captures all of the recurrent themes that emerged from the data

during the qualitative analysis, the total number of excerpts that represented each corresponding theme, the total number of interview participants who provided the excerpts, and the percentage of participants who discussed each theme. Those themes revealed participants' opinions about the kinds of metrics they would use to measure the "Focus on results, not process" initiative's success, the meaning and goals of the initiative, the next step in achieving the initiative's goals, how they heard about it, the kind of support initiative implementation is receiving, successes and failures at initiative utilization, and how to make generic initiatives successful. Now the data analysis will be combined with the steps to create metrics and attributes of good metrics from the literature and applied to the initiative of interest to draw conclusions and make recommendations for further action.

V. Conclusions and Recommendations

This chapter presents conclusions drawn from the data analysis and makes implementable recommendations to help the sponsor of this research and the acquisition community more effectively utilize the initiative of interest. This research has attempted to help senior Air Force leaders know how well the “Focus on results, not process” initiative is working and build a framework for developing measures of success for corporate level Air Force acquisition initiatives. That metrics framework was built by reviewing literature and distilling the steps involved in creating metrics down into three universal steps and the attributes of good metrics into a core set of attributes, by performing a qualitative data analysis on interview data gathered from acquisition practitioners, and by then applying those elements to the initiative of interest as a case study and recommending metrics for the initiative as a result. The following sections discuss the conclusions and recommendations reached through this research, and describe the steps involved in the follow-on quantitative phase of the research.

Conclusions

Five conclusions were drawn from the interview data. A breakdown in communication about what the initiative meant occurred throughout the acquisition workforce; no consistent definition for the initiative was found among participants except among the participants who helped author the initiative and those who work in ACE offices. Next, it was determined that disconnects exist between the middle management level and the other management levels on several fronts. Middle management shared a unanimous view on what the initiative was intended to accomplish, but that view differed

from the view that senior leaders and SPO level workers shared. Middle management also did not appear to see the connection between the initiative and the Agile Acquisition concept that both senior leaders and SPO level workers did. As discussed in detail later, the relationship between middle management's disconnects with the other management levels may be due in part to some bias towards the initiative originator. Another conclusion is that participants perceive that administrative hurdles to implementing the initiative are being put up by organizations and agencies outside of participants' chains of command. It was also concluded that there are differing perceptions about to whom the initiative applies. Lastly, it was noted that the use of the initiative may not be the best way to bring about the desired changes. The following sections provide a more in depth description of the conclusions reached through this research.

Breakdown in Communication of Initiative Definition.

The first conclusion reached through the data analysis is that there was a breakdown in communication of what the "Focus on results, not process" initiative meant. No consistent definition for the initiative was presented by the participants except by those participants who helped write the initiative and those who work in ACE offices helping other organizations implement the initiative (New Acquisition Center Provides Warfighting Capabilities, 2001; Lightning Bolts, 2004). Many people took the initiative to mean that if the acquisition process in question was not a law, then break it. But, according authors of the initiative, what was intended was for people to look at the non value-added processes and challenge the ones that do not make sense, and make a case for why a process should not be used and get a waiver for it. The processes were not meant to be ignored, but neither were they meant to be stumbling blocks along the way to

providing a capability to the end customer. One participant who works closely with the implementation of this initiative through their work with the Acquisition Center of

Excellence (ACE) offices summed it up well when she said:

“... they [the 2002 Lightning Bolt initiatives] were deployed but there wasn't a fanfare, a marketing campaign – there wasn't enough communication with the field on what was really meant by it. And so, what happened was, I think people made their own interpretations as what was meant by it and so one of the consequences was that some people said, hey, discipline goes out, all I have to say is I want to do this in the spirit of transformation the spirit of vague acquisition I should be able to do it, right? Well, that isn't necessarily true. You still have to provide reasons why you want to do something and that make sense consistent with the regulations and laws that we have. You usually can waive things but you can't just waive them without having a reason to waive them. You still have to make your case and you don't have to have a stack of papers this high to make a case but you still have to make case. So probably you may want to skip that step, it's like, I just want to do it so I should be allowed to do it, right? Well, no you should make a case for it.”

Disconnects Between Management Levels.

A second conclusion, related to the first, is that there is a disconnect between what both senior Air Force leaders and SPO level workers think the initiative was meant to accomplish and what the middle management level leadership thinks. The people at the senior leader and the SPO worker ends of the management chain seem to have a clearer understanding of what the Lightning Bolt was supposed to mean and think that getting rid of the non value-added processes is a good thing. For example, senior leaders provided guidance on how to apply the initiative and on what the initiative means in the form of policy letters, directives, and briefings (Department of the Air Force, 4 February 2003; Department of the Air Force, 10 July 2003; Senate Armed Services Committee, 2002). In addition, SPO level workers provided numerous examples of success stories at implementing the initiative within their program offices, showing a clear understanding

of the initiative and active use of it. However, middle management thinks the initiative is a “dead horse,” as several middle management participants called it, and they think that the Air Force is not even really pursuing the “Focus on results, not process” philosophy. Many of them cited the Hammer training that they are being required to attend which tells them that process is everything and that the results will follow, and so this initiative is counter to the training they are receiving. The majority of middle management participants interviewed shared this view, though that is not to say that they all thought the approach they perceived the Air Force to be taking (i.e., process focused versus results focused) was the right one.

The disconnect between management levels may be partially due to some bias the middle management appears to have towards the originator of the Lightning Bolt initiatives. This is visible in some of the participants’ comments. For instance one middle management member said “this initiative really didn't do anything to me, but to be honest with ya', I thought it was a parroting of something that Mrs. Druyun heard out of the Chief's mouth...” Another middle management commented, “I'll tell you, you know the tension between, and tension is a very kind term, between Dr. Sambur and Darlene Druyun, you know, I -- I can't imagine there being any way that he would fully embrace, you know, the things that you left behind... Darlene is gone, Darlene's policies are gone.” And a third middle management member who was interviewed said “my honest opinion is I'm not sure it [the initiative] means much of anything, to tell you the truth, I mean, when Mrs. Druyun came up with the last set of Lightning Bolts, she was just lookin' -- I mean, it's more of a -- of a -- it's more of a buzz word to me than anything, you know, ‘Focus on Results, Not Process’.”

In addition, middle management does not seem to see any connection between the Lightning Bolt initiative and the Agile Acquisition philosophy. One middle management participant put it this way:

“But, you know, Agile Acquisition is good. Get the bureaucracy out of the way, that's the -- that starts the -- you know, the policy stream of Dr. Sambur. Better systems engineering, incentivizing systems engineering, expectations management, realistic cost estimates. All those things are -- you know, are now the objectives of, you know, whatever we want to call it, reformation, transformation, re-engineering... What you don't hear, you know, focus on results, not process. That -- that's still a good concept, but it's not what people are thinking or saying.”

The initiative of interest was meant to serve as one of the tools to help accomplish Agile Acquisition (Department of the Air Force, 4 February 2003). The initiative and Agile Acquisition have the same goals of improving the speed and credibility of the acquisition community, and people are expected to tradeoff non-critical program elements (i.e., get rid of non value-added processes) as part of Agile Acquisition which is also what the initiative was meant to drive (Department of the Air Force, 4 February 2003).

Administrative Obstacles to Initiative Implementation from Outside Agencies.

Another conclusion is that several administrative obstacles to successfully implementing the initiative exist. Participants clearly stated that they are getting the support they need from their immediate bosses, but that there are obstacles from outside organizations and agencies; for example, added oversight from Congress, having to work with the Department of Defense and other services, and having to get approvals from people outside of their decision chain of command. Thirty percent of participants stated that those outside their chain of command, who can still influence their level of success at implementing the initiative, are not providing the support participants need. Numerous

participants also included the Office of the Secretary Of Defense (OSD) among their biggest perceived roadblocks. For example, one former PEO said they agreed “absolutely, one hundred percent” with other participants that OSD is one of the main places they start hitting roadblocks. The ChemSentry program follow-on buy of chemical testers, discussed previously in chapter four, was cited as an example of OSD’s counterproductive involvements.

Differing Perceptions About Who is to Implement the Initiative.

In addition to there being roadblocks to implementing the initiative, people outside of the acquisition community do not think the initiative applies to them. According to some participants, the dubbing of the initiative as an acquisition reform initiative led people within the requirements arena (e.g., Air Combat Command), people in the testing community, and those in the logistics and weapon system sustainment community to think the initiative was only geared towards weapon system acquisition offices. The negative responses from many of the people approached to participate in this research cited the point that they did not think the initiative applied to them as the reason they could not help with this research; Test and Evaluation Centers, Air Logistics Centers, and an Air Force Space Command System Program Office (SPO) did not participate in this research for that reason.

Initiative May Not Be Most Effective Way to Bring About Desired Changes.

The last conclusion made from the data analysis is that using an initiative like this may not be the most effective way to accomplish the desired behavioral change. Just sending out an initiative and leaving it up to the workers in the acquisition trenches to figure out how to apply it will not cut it. The need for leadership and people’s fears of

change and failure need to be addressed. Participants, including the middle management personnel, consistently said that senior leaders need to be more engaged and regularly vocal about the importance of things like the initiative for it to be successful. After conclusions were reached, recommendations were developed using both the data analysis and literature review findings.

Implementable Recommendations

Several implementable recommendations are presented in the following sections. The first recommendation was developed by applying the framework for developing metrics that this research has produced to the “Focus on results, not process” initiative. As previously discussed, five categories of metrics are suggested for the initiative, specifically schedule, customer satisfaction, cost, credibility, and performance. The first recommendation of this research will only address the metric category of customer satisfaction because the categories of schedule, cost, credibility, and performance have been previously addressed by other Air Force agencies and because cost, schedule, and performance metrics are already broadly used across the Air Force. The recommendations of this research attempt to focus on areas that will be of the most interest and utility to the research sponsor and to the Air Force.

Customer Satisfaction Metrics to Measure Initiative Success.

This research recommends the use of customer satisfaction metrics to measure the success of the “Focus on results, not process” initiative. Customer satisfaction is the key to organizational success (Gibson and others, 2003:238). No matter how precisely a schedule is maintained, how much cost savings are realized, how credible the end

customer thinks the acquisition community is, or what exceptional performance a weapon system or process has, if the customer is not satisfied with the result, the acquisition community has failed. Customer satisfaction is described as the extent to which a process or product meets a customer's expectations (Kotler and Armstrong, 2001:9; Naumann and Jackson, 1999:71; Zeithaml and Bitner, 2006:75). The dimensions of customer satisfaction can be applied across the other categories of metrics (e.g., schedule, credibility, and performance) to suggest metrics for the initiative. It should be noted that multiple customer satisfaction metrics could apply and one size does not fit all (INCOSE, 1998:9); the following are examples that apply, but future research could provide additional customer satisfaction metrics. A customer satisfaction metric that applies to schedule is timeliness (Ellis and Curtis, 1995; Hayes, 1992:8). Customer satisfaction metrics for performance are reliability and perceived quality (Ellis and Curtis, 1995; Naumann and Jackson, 1999:72). And a customer satisfaction metric for the area of credibility is responsiveness (Ellis and Curtis, 1995; Hayes, 1992:8; Naumann and Jackson, 1999:72). A customer satisfaction metric for cost is not suggested because, according to Hammer (2001:103), it tells very little if anything about the business. The visual depiction of how the dimensions of customer satisfaction can be applied across the metric categories of schedule, cost, performance, and credibility to produce generally applicable customer satisfaction metrics for the initiative is displayed below as Table 6. The list of metrics is general since the attributes of each dimension are very product specific, meaning the metrics should be tailored for a better fit depending upon what product or process they are applied to (Naumann and Jackson, 1999:73). One size metric

does not fit all (INCOSE, 1998:9). The development of more specific program and process metrics could be explored as part of future research.

Table 6. Generally Applicable Customer Satisfaction Metrics

	Dimensions of Customer Satisfaction Metrics
Schedule	Timeliness
Performance	Reliability and perceived quality
Credibility	Responsiveness

In addition to suggesting metrics for the “Focus on results, not process” initiative, this research makes several other recommendations to improve the implementation of the initiative and future initiatives. These additional recommendations are discussed in greater detail below. Following those recommendations are suggestions for future research and a summary of this research.

Innovation Training for Acquisition Workforce.

The acquisition workforce needs to continue to be recruited and trained to think outside the box and to not always follow the cookbook recipe. The workforce has traditionally been trained in how to use the Federal Acquisition Regulation (FAR), the Department of Defense 5000 Series, source selection guides, and other guides and instructions about what processes and procedures to follow, but if the acquisition community is now expected to be innovative, not have the business as usual mindset, think for themselves, be creative, and change how acquisitions are conducted, then they have to be trained in how to do that. There is a need for this kind of training among the workforce. This is evidenced by one middle management participant who was speaking to acquisition practitioners on Lightning Bolt initiatives and a woman in the audience said, “I used to be able to sit down at my desk and open my cookbook and follow the

recipe and I'd get done with the product. You took my recipe book away from me and I don't know what to do.” The objective now is not to have people open the book and follow it step by step, but instead to think for themselves and do what is smart. But they have to be trained how to do that. One avenue to train the acquisition community is to train people in modern business philosophies and tactics, like strategic purchasing, the entrepreneurial mindset, and organizational management, versus the standard government process and procedure oriented training.

More specifically, several contracting division chiefs noted that contracting personnel should be specifically targeted for training because they are often seen as roadblocks. The division chiefs also stated that many contracting people are very regimented in how they do business and if it is not specifically authorized in the Federal Acquisition Regulation they are not willing to do it. In addition, many civilians entering the government sector today are taught little about the military in their educations, and it is unlikely that they will put the emphasis on the warfighter in their work if they do not have an understanding of what the warfighter does or goes through on the battlefield. Participants suggested that one way to sensitize government civilians, specifically those in the contracting career field, to the warfighters' needs is to include them in Professional Military Education (PME) classes. This is being done to some extent already, but it should be expanded. Participants also distinctly identified the need for personnel at the Defense Finance and Accounting Service and the Defense Contract Management Agency to receive PME.

Create Functional Area Guiding Principles.

The next recommendation is that all functional areas (e.g., engineering, finance, program management) within the Assistant Secretary of the Air Force for Acquisition (SAF/AQ) office create a set of guiding principles for the people within their functional areas in the acquisition community that would spell out what is expected of those people as they participate in this transformation movement. The guiding principles created by SAF/AQC for contracting personnel could act as the template for the other functional areas. There is a need for an expectations guide; participants from the ACE offices noted that they get numerous calls from people asking what is expected of them in this new acquisition environment and from people asking how to do acquisition without the cookbook. Principles like the ones SAF/AQC has included in part one of the Air Force Federal Acquisition Regulation (FAR) Supplement (Department of the Air Force, 1 May 2003) give people an idea of what they are expected to do, how they are expected to act, and what they are expected to accomplish.

Make Waiver Process Easier.

The next recommendation is to make the waiver process less burdensome and faster. The initiative of interest is designed to enable acquisition practitioners to challenge the things that do not make sense; in turn, the process used to make these challenges needs to be addressed. It takes so much effort and time to get a waiver for regulations, Air Force Instructions, and other required processes that you might as well have just done the process or followed the regulation or instruction that you were trying to change. Many participants said the current method is just too much trouble. This view is supported by one of the General Officers interviewed who stated the following.

“So what's important for me in an initiative is that it be something I can do and it would be value added and it would actually cut my work. In other words, don't tell me... I can have an exception to somethin' if I have to go ask for -- you know, I have to go sell this exception to every layer of bureaucracy I've gotta work with. It just doesn't -- it's -- it's just here, let me do it the regular way.”

Clarify Future Initiatives.

It is also recommended that the next set of initiatives to be sent out not use buzzwords like acquisition or acquisition reform; rather, they should be very specific, and metrics and a commander's intent statement should be released along with the initiatives. One middle management participant noted that when the term acquisition reform initiative is used “the rest of the Air Force thinks it only applies to the acquisition world.”

Future initiatives should also be well defined and not general statements.

Numerous interview participants noted that the most recent series of Lightning Bolt initiatives greatly differed from the previous initiative releases in that it was vague and too general. Specificity leaves less room for ambiguity and misinterpretation. Assigning specific goals or tasks, which in this case would be a specific initiative, has been proven to improve performance (Latham and Locke, 1979:68-80; Latham and Yukl, 1975:824-843; Locke, 1968:157; Taylor, 2001:64). Specific initiatives, in turn, will aid in the creation of specific metrics.

It is also recommended that measures of success for the next initiatives be established before the initiatives are released. This will help clarify what the initiatives are trying to accomplish and what changes they are trying to bring about, and help determine when the initiative has been accomplished.

In addition, a commander's intent statement should accompany the initiatives. A commander's intent statement will give those expected to implement the initiatives some

insight into the thinking behind them, and will allow those who implement them the freedom to use their initiative and judgment in a manner that is consistent with the aims of higher commanders (Department of the Air Force, 10 July 2003:2).

Create Database of Initiative Implementation Success and Failure Stories.

The next recommendation is that the Secretariat of the Air Force Acquisition Center of Excellence (SAF/ACE) office compile a database that contains examples of successful and failed attempts to use the “Focus on results, not process” initiative. Multiple interview participants expressed an interest in seeing such a database created. It would serve as a way to make the initiative of interest, which is more general and conceptual than previous Lightning Bolt initiatives, more practical and applicable for acquisition practitioners. Several participants suggested that it could help dispel fear and apprehension about trying something new and failing by providing examples of programs that failed at using the initiatives, but were still rewarded for being innovative and for trying. The success and failure examples presented in this research can serve as the starting point for the database.

It is suggested that a link to the database be posted on the SAF/ACE internet homepage. And the inclusion of a feature story in *Agile Acquisition: The Air Force Acquisition Newsletter* on one of the successes or failures should be considered, with the monthly stories alternating between failure and success.

ACE Office Road Shows.

If they are not already doing so, it is also recommended that the SAF/ACE office coordinate with the Center ACE offices to present road shows specifically focused on the initiatives they are overseeing, like the initiative this research is focusing on, at bases

throughout the Air Force. Road shows could be the avenue by which the ACE offices clearly convey the intent behind the initiatives and explain what they were meant to accomplish. Road shows would be a display of leadership's support for and advocacy of the initiatives. They could be the path to train and educate people about the initiatives and obtain feedback from the troops on initiative implementation. Additionally, they could be a time to share stories of successful initiative utilization and stories where people or programs were not successful.

Consistent Statement of Initiative Support from Senior Air Force Leaders.

Lastly, it is recommended that the Chief of Staff of the Air Force be asked to include a statement of support for continued acquisition reform, stressing the importance of compliance with acquisition initiatives in his monthly *Chief's Sight Picture* newsletter. And it is recommended that the Secretary of the Air Force be asked to make a similar statement in his *Secretary's Vector* newsletter. Such statements would address the prevailing and pervasive request from interview participants and others for consistent, continual, vocal support for the initiative of interest from the Chief and other senior Air Force leaders. The Chief and the Secretary's continued and open support would enable those expected to implement the initiatives to really challenge the party-line way of doing acquisitions, become innovative, and change the acquisition process.

This research has made several recommendations to better measure the success of the initiative's performance, and to improve its implementation and that of future initiatives. Eight recommendations are made in total. The first is to use customer satisfaction metrics to measure the initiative's level of success in the areas of schedule, credibility, and performance. The second recommendation is to continue to shift the

focus of acquisition workforce training from the traditional process and procedures cookbook method of doing acquisitions to innovative, business oriented training. And it is recommended that Defense Finance and Accounting Service and Defense Contract Management Agency civilians be included in Professional Military Education classes. The third recommendation is that guiding principles be created by each functional lead within SAF/AQ for those in the acquisition community within their functional areas, using those established by SAF/AQC as a model. The fourth recommendation is to examine the waiver process and make it more user friendly. The fifth recommendation is clarify future initiatives; this can be done by making the initiatives very specific, sending out metrics and a commander’s intent message with the initiatives when they are first sent out, and not using buzzwords (e.g., acquisition reform). The sixth recommendation is to create a database of success stories and failures at implementing the “Focus on results, not process” initiative. The seventh recommendation is for the Acquisition Center of Excellence (ACE) offices to hold regular road shows discussing the initiative and others. The eighth recommendation is to ask the senior Air Force leadership to send out regular and clear statements of support for the initiative and acquisition reform efforts. Table 7 is a summary of the recommendations made by this research.

Table 7. Summary of Research Recommendations

	Recommendations
1.	Customer satisfaction metrics to measure success of initiative
2.	Innovation training for acquisition workforce
3.	Create functional area guiding principles
4.	Make waiver process easier
5.	Clarify future initiatives
6.	Create database of initiative implementation success and failure stories
7.	ACE office road shows
8.	Consistent statement of initiative support from senior Air Force leaders

Future Research

In addition to drawing conclusions and making recommendations based on the literature and data analysis, it is suggested that future studies continue the research stream begun by this project. The future research would consist of a quantitative analysis that would validate the findings of the qualitative research.

As part of future research, a questionnaire can be constructed using the data gathered from the interviews. The questionnaire can be used to evaluate the generated metrics along the dimensions of “good” metrics; specific metrics that apply to the categories of metrics this research suggests can then be identified during future research. A questionnaire development process is provided below.

Quantitative Data Analysis

During the second phase of the research, a panel of experts can provide an independent assessment of whether or not the metrics suggested for the Lighting Bolt of interest possess the characteristics of good metrics. They can use a questionnaire constructed using the data gathered from the interviews. The questionnaire can be used to evaluate the generated metrics along the dimensions of “good” metrics. The metrics can be numerically ranked against the dimensions of good metrics using a seven-point interval scale. Univariate statistics can then be used to analyze the central tendency, dispersion, and score distributions of the resulting data.

Response Format.

A seven point scale can be used for the quantitative phase because seven point scales are the best choice in terms of subjects being able to clearly distinguish scale

values from one another, and the best for reliability (Cox, 1980:414; Schwarz and others, 1991:571). The rating scale for this research also consists of positive numbers because scales being used to assess the intensity of individual attributes should be formatted from zero-to-positive values; this stresses that the question being asked deals with the presence or absence of the given attribute, instead of the presence of its opposite (Schwarz and others, 1991:578). It can be determined in the quantitative phase whether the survey instrument will use rating scales tailored to fit each attribute or if it is more appropriate to use a more universal scale for all of the attributes. These findings support using the measurement scale described above.

Validation.

A panel of experts can be provided with a list of all the metrics suggested by the interview data. They can then be asked to refine the list and regroup the metrics as necessary, in order to eliminate redundancies. The panel of experts can then be asked to quantitatively assess the refined list of metrics against the attributes of good metrics. By completing these two tasks, the panel of experts can provide content validity for the survey instrument developed. The survey instrument can be further validated in a follow-on effort that collects data from a representative sample, analyzing the responses statistically.

Measure of Central Tendency.

The mean rating for each metric can be calculated across all the participants. These ratings can then be ranked from highest to lowest, starting with the most important attribute. Then the ratings can be ranked against the second most important, and so on. The hierarchy of attribute importance can be based on the findings of the qualitative

phase of the research. This can show how the average participant rates each metric against the characteristics of good metrics.

But because the mean gives more weight to outliers that could skew the data, the median score for each metric rating can also be determined to further describe the central tendency (Dooley, 2001:321).

Measure of Dispersion.

Next, the dispersion of the data can be analyzed to determine how much the data varies above or below the mean. In this context, this value tells how much the ratings of this small sample differ among themselves (Kachigan, 1991:41). The standard deviation can be calculated to describe the data dispersion because it incorporates the distance from the mean for each observation, versus using the range which only uses the two most extreme observations and is susceptible to skewness by outliers (Dooley, 2001:321).

If participants' ratings vary greatly from one another, it may be an indicator that either the metrics or attributes are ill-defined, or it could mean that there is something unclear about the format of the questionnaire. Conversely, clustered ratings (i.e., ratings that are closely grouped together) may support that the questionnaire is sound, and they may provide a more accurate measurement of the quality of the metrics against the attributes.

Score Distributions.

Then, the score distributions can be shown through rank-ordering and frequency counts. Following Nunnally's (1959:46) suggestion for analyzing data when the number of subjects is small, the survey instrument score distributions will be described by rank-ordering. For example, if a metric has the highest score out of five metrics for the

dimension of simplicity, it can be easily understood how simple the metric is in comparison to the other metrics. After the central tendency and dispersion of the data are analyzed, the metrics can be ranked to illustrate which metrics possess the highest number of good attributes in comparison to one another.

And for a broader application, the frequency of how many times each metric is rated as having the various attributes and how many times they were rated as not having the attributes will be interpreted from the data. This can provide a more generalized rating of ‘yes - a particular metric is simple, or is meaningful to the customer, or relates to the strategic goals of the organization,’ and so on, or a generalized rating of ‘no - it is not simple,’ etc. Analysis of the quantitative data can provide support for conclusions reached through the qualitative phase of the research.

Discussion

This project was designed to help better understand the effectiveness of Air Force acquisition initiatives, using the Lightning Bolt initiatives as a case study, and to establish acquisition based measures of success. Specifically, this research focused on the Lightning Bolt 2002 initiative that is most closely linked with the goal set for the Air Force to improve speed and credibility: “Focus on results, not process” (Senate Armed Services Committee, 2002). This research examined the literature to provide a historical context for the Lightning Bolt 2002 acquisition initiatives, and to explain the importance and composition of metrics. From the literature a three step generic process for creating metrics and the core attributes of good metrics were identified. Next, the research described the interview process used to collect data and the qualitative method used to

analyze the data. Then the research explained the themes that evolved from the data and the resulting conclusions. Finally, the research made recommendations that could be implemented to further improve the performance of the initiative and made suggestions for future research opportunities.

This study gives Air Force leaders clear, implementable metrics that can be used as measures of success for the “Focus on results, not process” initiative, and provides recommendations that can be used to improve this initiative’s performance and that of future corporate Air Force acquisition initiatives. This study also gives Air Force leaders insight into whether or not this initiative and others like it are an appropriate and effective way to drive the changes they are meant to bring about. Finally, from a broader perspective, the framework used in this study can be used to develop measures of success for other corporate level Air Force acquisition initiatives.

Appendix A: Interview Assistance Request Letter

23 August 2003

Colonel Rita Jordan
AFIT/EN
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WP AFB, OH 45433-7765

Mrs. Marty Evans
Director, AF Acquisition Center of Excellence
Assistant Secretary (Acquisition)
SAF/ACE
1060 Air Force Pentagon
Washington, DC 20330-1060

Dear Mrs. Evans

Thank you for the sponsorship the Acquisition Center of Excellence (ACE) office is providing for the thesis research of Capt Carey Petit. Col Ralph DiCicco's help has been immeasurable in starting her research down a path that will prove useful to the Air Force acquisition community. I am writing to you to ask for your continued assistance with the next step of this research.

A large portion of Capt Petit's research requires interviewing system program office (SPO) members at various managerial levels who have had experience with the 2002 acquisition Lightning Bolt initiative "Focus on results, not process." Ideally, individuals throughout the chain of command at selected SPOs within all of the Air Force Product Centers and Air Logistics Centers would be targeted for interviews. The target audience would ideally consist of: 40-50 people; an equal number of people to be interviewed at each of the Product and Logistics Centers; individuals who hold varying levels of managerial responsibility (e.g., people ranging from program managers, to Development System Managers, to System Program Directors, and potentially all the way to Center Commanders). The target timeframe for the interview process would ideally be to identify the interview subjects by 30 Sep 03 and complete the interviews by 31 Oct 03.

I would like to ask for the assistance of the ACE office in identifying individuals within this target audience who have experience with the "Focus on results, not process" initiative. It is my understanding that the Center level ACE offices have the resources to identify such individuals at their respective Centers. Any assistance your office or the Center ACE offices can offer in identifying these interview subjects by name, location, phone number, and email address would be a great help. For your convenience, a draft letter inviting SPO members to participate in this interview process is attached for your signature. Capt Petit would like to send the letter to the SPO members on your behalf,

once the Center ACE offices have identified them. Your continued support of this research effort is greatly appreciated.

If you have any questions, please contact Capt Petit by phone at (937) 252-3164 or by email at carey.petit@afit.edu. Your help in locating interview subjects who are already familiar with the initiative will greatly facilitate the interview portion of this research. Thank you for your help with this matter.

Sincerely

RITA A. JORDAN, Colonel, USAF
Associate Dean
Graduate School of Engineering and Management
(Thesis Committee Chair)

CAREY PETIT, Captain, USAF
Graduate School of Engineering and Management

Attachment:
Interview Invitation Letter

Appendix B: Interview Invitation Letter

31 October 2003

1560 Wilson Blvd.
Suite 901
Arlington, VA 22209

Potential Interview Subject
1050 Air Force Pentagon
Washington, D.C. 20330-1050

Dear (Interview Participant's Name)

Through the assistance of the Center ACE offices, you are one of a very small group who have been identified as having experience using or knowledge of the 2002 acquisition Lightning Bolt initiative "Focus on results, not process." As your schedule permits, Capt Carey Petit would like to set up an appointment to interview you about your experiences with this acquisition reform initiative. Capt Petit is a graduate student at the Air Force Institute of Technology. Her master's thesis research is on developing measures of success for the "Focus on results, not process" initiative.

Capt Petit's research will include interviews with people throughout Air Force Materiel Command who hold positions at various managerial levels. I am personally interested in what you, the front-line acquisition practitioners, think about these initiatives and their appropriateness. Most importantly, this will give me the necessary insight to make changes and improvements that help us all serve the Air Force better.

Attached is a copy of the interview questions that will be asked. However, the interview is meant to be only partially structured to allow for the free flow of ideas that are outside the confines of the preset interview questions and to maximize the time available for open discussion. Information collected during the interview will be completely confidential; no individual will be identified in any way in Capt Petit's thesis or related published articles. The interview questions have been approved through the Air Force Personnel Center and assigned the official survey number of USAF SCN 03-098.

Thank you in advance for your willingness to assist Capt Petit in her research efforts. She will be in touch with your office to set up an appointment for your interview. If you have any questions, Capt Petit can be reached by phone at (937) 252-3164 and by email at carey.petit@afit.edu.

Sincerely

// SIGNED//

MARTHA T. EVANS
Director
Acquisition Center of Excellence

Attachment:
Interview Question List

Attachment: Interview Question List

1. What do you think the 2002 Lightning Bolt “Focus on results, not process” means?
2. What do you think are the results it is trying to accomplish? What are its desired outcomes?
3. Do you think these goals are appropriate?
4. What metrics would you use to measure those results or outcomes?
5. What do you consider to be the most important aspects of the “Focus on results, not process” acquisition reform initiative?
6. What should be the next step in “focusing on results”?
7. How did you hear about the “Focus on results, not process” initiative?
8. How is your organization implementing it?
9. What has been your role in the development and/or implementation of this initiative?
10. How would you know if you are succeeding at implementing the initiative?
11. What kind of support is your organization getting in order to implement the initiative?
12. Are you getting the support you need to implement the initiative?
13. How is your organization supporting you in your attempts to implement the initiative?
14. Have you heard of any success stories at implementing the initiative?
15. Have you heard of any big failures at implementing the initiative?
16. What do you think it takes to be successful in implementing any acquisition reform initiative?
17. What is important to you in an acquisition reform initiative?
18. Is there anything else you would like to discuss?
19. Do you have any questions for me?

Appendix C: Interview Related Exchanges

23 August 2003

Captain Carey Petit
AMC P.O. Box 33768
WP AFB, OH 45433

Potential Interview Subject
System Program Director, XXX Platform
XXXXXX AFB, XX 00000

Dear (Interview Subject's Name)

I want to thank you again for agreeing to assist me with my effort to develop measures of success for the 2002 acquisition Lightning Bolt initiative "Focus on results, not process." I appreciate you taking time out of your busy schedule to participate in the interview we have scheduled for 23 Sep 03 at 1300hrs. Please let me know if any conflicts arise with the current time we have scheduled for our interview. I look forward to talking with you.

I can be reached by phone at (937) 252-3164 and by email at carey.petit@afit.edu, if you have any questions.

Sincerely

CAREY PETIT, Capt, USAF
AFIT Graduate Student

Appendix C: Interview Related Exchanges

Interview Script

NOTE: Have interview subject fill out checklist below at the beginning of the interview during the set-up time (i.e., while tape recorder is being set up and other preparations are being made):

Demographics

Age and Gender?

Occupation

- Functional area?

Organization

- Number of organizational levels that separate you from the Center

Commander?

Supervisor

- If so, how many people do you supervise? What are their occupations?

Tenure

- Time in service?

Introduction

Good morning (afternoon), my name is Capt Carey Petit. I am a student in the Strategic Purchasing Master's Degree Program at the Air Force Institute of Technology (AFIT). The information I collect through this interview will be part of my master's thesis. My thesis is about developing measures of success for the 2002 Lighting Bolt initiative "Focus on results, not process." I want to thank you for taking time out of your busy schedule to answer a few questions for me. Your help will potentially assist the Air Force Acquisition Center of Excellence (ACE) in establishing metrics for this initiative and in determining if such initiatives should be continued in the future, and you will greatly assist me in furthering my thesis work.

Confidentiality

Let me begin by saying that everything you say today will be completely confidential. Your comments will only be seen by me, my advisor, and a transcriber. Only general feedback on the responses of interview subjects will be used in my thesis. No individual will be identified in any way. Any quotations that are used in my final paper will be altered in a way to conceal your identity.

The interviews conducted during my research will be analyzed for common themes. These common themes will then be used to help me write a questionnaire that will assess the effectiveness of the "Focus on results, not process" initiative implementation and the appropriateness of metrics gathered from the interview data as future measurements of success for the same initiative. The questionnaire will potentially

be filled out by many people throughout Air Force Materiel Command (AFMC) and Air Force Space Command (AFSPC) in future research efforts.

As I will not be able to remember everything that is said during the interview, I will be taking notes and would like to ask your permission to record our conversation, which will then later be transcribed. No one other than me, my advisor, and a transcriber will read my notes or hear, or read the transcription of, the interview. At any time, you can read my notes and correct any mistakes you think I have made. And if at anytime, you would like to stop recording for any reason, please let me know. If you would like, I will be glad to forward a copy of this interview to you after it is transcribed.

Interview Format

I apologize up front for watching the clock, because I do not want to take up too much of your time. I have tried to limit my questions so as not to exceed 30-45 minutes. However, I want to stress that the interview is meant to be somewhat unstructured and free-flowing. So if there is anything that you would like to discuss further please let me know. Do you have any questions before we start?

Interview Items

To give you a brief summary of the focus of my research... The President, Secretary Rumsfeld, and other senior Air Force leaders are continuing to seek ways to improve the Air Force's acquisition processes through various means of acquisition reform. A series of acquisition reform initiatives called "Lightning Bolts" were started in 1995 by Ms. Darleen Druyun, then Principal Deputy Assistant Secretary of the Air Force for Acquisition Management. My research will focus on the 2002 Lightning Bolts entitled "Focus on results, not process." This initiative drives a "clean-sheet" approach to acquisitions by streamlining processes in order to remove non value-added steps. One recent example of this initiative in action is the rewriting of the regulations that govern weapon system procurement within the Department of Defense, the DoD 5000 series; portions of the regulation were eliminated while others were rewritten.

Now, from your personal experiences, I would like you to think of acquisition reform initiatives, specifically the 2002 Lightning Bolt initiative "Focus on results, not process." Think of your role in this reform effort. Also, try to recall the activities that surrounded the initiative and of your impressions of its facilitation.

<< Pause a moment >>

OK, let's get started...

1. What do you think the 2002 Lightning Bolt "Focus on results, not process" means?
2. What do you think are the results it is trying to accomplish? What are its desired outcomes?

3. Do you think these goals are appropriate?
4. What metrics would you use to measure those results or outcomes?
5. What do you consider to be the most important aspects of the “Focus on results, not process” acquisition reform initiative?
6. What should be the next step in “focusing on results”?
7. How did you hear about the “Focus on results, not process” initiative?
8. How is your organization implementing it?
9. What has been your role in the development and/or implementation of this initiative?
10. How would you know if you are succeeding at implementing the initiative?
11. What kind of support is your organization getting in order to implement the initiative?
12. Are you getting the support you need to implement the initiative?
13. How is your organization supporting you in your attempts to implement the initiative?
14. Have you heard of any success stories at implementing the initiative?
15. Have you heard of any big failures at implementing the initiative?
16. What do you think it takes to be successful in implementing any acquisition reform initiative?
17. What is important to you in an acquisition reform initiative?
18. Is there anything else you would like to discuss?
19. Do you have any questions for me?

Appendix D: Summary of Interview Themes and Participant Responses

When reviewing Appendix D, be aware of the following factors: a) more than one theme could apply to a participant's response for any given interview question (e.g., Table 4 in chapter four shows how one response from a participant applied to the themes of schedule, cost, and performance); and b) the percentage of participants among whom the themes occurred may seem elevated due to the low number of participants who participated in the research (e.g., one participant equals four percent of the total participants).

Appendix D: Summary of Interview Themes and Participant Responses (continued)

<i>Interview Questions: What metrics would you use to measure those results or outcomes? AND How would you know if you are succeeding at implementing the initiative?</i>				
	Themes from Qualitative Analysis of Interview Data	Total No. of Excerpts that Expressed Theme	Total No. of Participants who Stated the Excerpts	Percentage of Participants Among Whom Theme Occurred
	Schedule	29	17	74%
	Customer satisfaction	28	14	61%
	Cost	13	9	39%
	Performance	8	6	26%
	Credibility	6	4	17%
	<i>Interview Question: What do you think the 2002 Lightning Bolt "Focus on results, not process" means?</i>			
	Themes from Qualitative Analysis of Interview Data	Total No. of Excerpts	Total No. of Participants	Percentage of Participants
	Focus on the end customer not the acquisition process itself; support the customer	10	10	43%
	Does what we are doing make sense and does it add value? If not, get rid of it or waive it, remove the unnecessary steps	9	8	35%
	Freeing people up	5	4	17%
	Focus on getting the product out, effects based or outcome based acquisitions	3	3	13%
	Want results not just process	3	3	13%
	Clean-sheet approach	3	3	13%
	The initiative has little meaning and little use	3	3	13%
	Sets the stage for spiral acquisition and evolutionary acquisition	2	2	9%
	Risk management	2	2	9%
	Process must serve results	2	1	4%
	Changing people's mindset to look at what they can do versus what they cannot	1	1	4%

<i>Interview Question: What do you think are the results it is trying to accomplish? What are its desired outcomes?</i>		Total No. of Excerpts	Total No. of Participants	Percentage of Participants
Themes from Qualitative Analysis of Interview Data				
Support the Agile Acquisition strategy; provide capability in a timely way without getting bogged down in the processes		11	9	39%
Change people's way of thinking; be creative, innovative, and use common sense		10	8	35%
Get people to think about the outcome not the how		5	4	17%
Promises made, promises kept		5	2	9%
Roadblocks exist to accomplishing initiative outcomes from 1) middle management, 2) SAF/AQ staff and other services, and 3) contracting		4	2	9%
Unchain the process and make bureaucrats look at the big picture		3	2	9%
Goals are unclear		2	2	9%
Challenge decision makers when necessary, risk management		2	2	9%
Freeing up the workforce, empowering them		2	1	4%
<i>Interview Question: Do you think these goals are appropriate?</i>				
Themes from Qualitative Analysis of Interview Data				
Positive reply		21	20	87%
Negative reply or criticism		8	6	26%
<i>Interview Question: What do you consider to be the most important aspects of the "Focus on results, not process" acquisition reform initiative?</i>				
Themes from Qualitative Analysis of Interview Data				
Organizational culture		9	6	26%
Entrepreneurial mindset		7	7	30%
Responsiveness to customer		6	5	22%
Communication		5	4	17%
<i>Interview Question: How did you hear about the "Focus on results, not process" initiative?</i>				
Themes from Qualitative Analysis of Interview Data				
Did not hear about initiative until this research project		5	4	17%
Through chain of command and normal information channels		7	7	30%
Direct involvement with Druyun (initiative originator)		6	5	22%
Helped write the initiative		3	3	13%
Acquisition reform training		1	1	4%
Sambur's Agile Acquisition policy letter		1	1	4%
Working in Acquisition Center of Excellence (ACE) office		1	1	4%

<i>Interview Question: What is the next step in "focusing on results"?</i>	Total No. of Excerpts	Total No. of Participants	Percentage of Participants
Themes from Qualitative Analysis of Interview Data			
Change the acquisition workforce culture	6	4	17%
Apply the initiative to the processes that support Evolutionary Acquisition	6	3	13%
Training and education	3	3	13%
Expectation management with the warfighters and Air Staff, and in turn Congress	3	3	13%
Stop smacking people's hands for doing acquisitions differently than it has always been done	2	2	9%
Corporate buy-in across oversight organizations within the Air Force and the Department of Defense	2	2	9%
Senior Air Force leadership buy-in	2	2	9%
Provide examples of specific success stories	2	2	9%
Roadshows	2	2	9%
Be specific about what constitutes "results"	2	2	9%
Move people from oversight to execution roles	2	1	4%
Take people out of the approval chain who are not in the decision chain	1	1	4%
Bust roadblocks	1	1	4%
Improve filtering down of initiatives; initiatives lose a lot of punch by the time they get to the SPO level workers	1	1	4%
Release a new set of initiatives on a more practical and specific level	1	1	4%
Obtain feedback from the troops	1	1	4%
Look at how we make acquisitions work in the future	1	1	4%
Include demonstration of initiative implementation as part of appraisals	1	1	4%
Send out messages about when programs and people failed, but were still rewarded for trying and being innovative	1	1	4%
Set a standard or cut-off point where failing programs are turned off	1	1	4%
Get people willing to take risks	1	1	4%
Obtain buy-in from functional and operational communities	1	1	4%
Follow through	1	1	4%

<i>Interview Question: How is your organization implementing it?</i>			
Themes from Qualitative Analysis of Interview Data	Total No. of Excerpts	Total No. of Participants	Percentage of Participants
ACE offices assist programs to challenge burdensome processes and try to influence people to use the philosophy of the initiative	7	5	22%
Stress full participation of Integrated Product Teams (IPTs) and ensure IPTs include the warfighters, contractors, and contracting officers	7	3	13%
Rewrote Air Force Instructions and Air Force Federal Acquisition Regulation Supplements and other guiding documents to free up people	4	4	17%
Negative replies about not using the initiative	3	3	13%
Opportunity management, being proactive versus reactive, being creative, and using risk management	4	2	9%
Challenged SPO members to use common sense, and then if it is not the law and does not make sense to break it	3	2	9%
Ensured Requests for Proposals and proposals are outcome based	2	2	9%
Developed and implemented training on the using the initiative	2	2	9%
Applied initiative as appropriate to SPO programs	1	1	4%
Used internal teamwork to change SPO mindset from no unless you can prove yes, to yes until a roadblock is found that says it cannot be done	1	1	4%
Empowered SPO program leads, lessened emphasis on functional leads; remove non-value added parts of the chain of command	1	1	4%
<i>Interview Question: What has been your role in the development and/or implementation of this initiative?</i>			
Themes from Qualitative Analysis of Interview Data	Total No. of Excerpts	Total No. of Participants	Percentage of Participants
Being an enabler for your team	14	8	35%
Developer or author of the initiative	3	3	13%
Endorser and advocate of the initiative	3	3	13%
Had no role in the development of the initiative	2	2	9%
Provide advice to senior leadership on ways to implement the initiative	2	2	9%
Helped rewrite policies as a result of using the initiative	2	2	9%
Provided training for SPOs on how to use the initiative	2	2	9%
Managed customer expectations	2	1	4%
Architect for implementation of the initiative within a SPO	1	1	4%

<i>Interview Question: What kind of support is your organization getting in order to implement the initiative?</i>			
Themes from Qualitative Analysis of Interview Data	Total No. of Excerpts	Total No. of Participants	Percentage of Participants
Top down support	18	13	57%
ACE help in planning for program events	3	3	13%
Contractor support	1	1	4%
Initiative training, risk management training and Discovery Map training	1	1	4%
Being left alone and trusted to go implement the initiative is the best support	1	1	4%
Internal support	1	1	4%
Congressional language can be a big supporter	1	1	4%
No support is being given	3	3	13%
The bureaucracy is fighting implementation of the initiative	2	2	9%
Senior leaders empowered the workforce to go out and implement the initiative, but they are not preaching it enough themselves; need strong, consistent advocacy	2	1	4%
Headquarters puts the initiatives out but does not have to live with them	1	1	4%
<i>Interview Question: Are you getting the support you need to implement the initiative?</i>			
Themes from Qualitative Analysis of Interview Data	Total No. of Excerpts	Total No. of Participants	Percentage of Participants
Receiving support from those within their chain of command	17	15	65%
Not getting support from related processes and people outside their control	10	7	30%
Sort of or do not know	1	1	4%
<i>Interview Question: How is your organization supporting you in your attempts to implement the initiative?</i>			
Themes from Qualitative Analysis of Interview Data	Total No. of Excerpts	Total No. of Participants	Percentage of Participants
Support and encouragement from leadership within their direct chain of command	12	11	48%
By being trusted to do the job and being left alone to do it	3	3	13%
Strong Acquisition Center of Excellence (ACE) support	3	1	4%
No kick-backs from System Program Office (SPO) level workers means they have accepted the challenge to implement the initiative	1	1	4%
Not enough engaging from Senior Executive Service or General Officer level	2	1	4%

<i>Interview Question: Have you heard of any success stories at implementing the initiative?</i>			
Themes from Qualitative Analysis of Interview Data	Total No. of Excerpts	Total No. of Participants	Percentage of Participants
No specific examples	11	10	43%
Provided examples	14	11	48%
Process level success stories			
Addition of source selection plan to System Acquisition Management Plan	1	1	4%
Using same pricing structure for Proposal Analysis Report and Price Competition Memo	1	1	4%
Elimination of Mission Need Statement and Operational Requirements Document for desktop computer purchase	1	1	4%
Reduction in training approval time	1	1	4%
Delegation of contract approval authority so people rarely have to go through contracting headquarters	1	1	4%
Weapon system program success stories			
Crystal Modification Program	1	1	4%
Global Hawk	1	1	4%
Micro Impulse Radar	1	1	4%
Patent Support Pallet	1	1	4%
Weaponization of Predator	1	1	4%
ChemSentry Chemical Detectors	2	2	9%
<i>Interview Question: Have you heard of any big failures at implementing the initiative?</i>			
	Total No. of Excerpts	Total No. of Participants	Percentage of Participants
Themes from Qualitative Analysis of Interview Data			
No specific examples	11	10	43%
Provided examples	6	6	26%
Process level success stories			
ChemSentry Chemical Detectors	1	1	4%
F/A-22 Aircraft program	2	2	9%
Program Executive Officer (PEO) shop move to Air Force Materiel Command Product Centers requiring more manpower than when they were at Pentagon	1	1	4%
Process level success stories			
Funding reprogramming taking one hundred and thirty days just to leave the Pentagon	1	1	4%
Electronic Systems Center System Program Office not using zero-baseline	1	1	4%

<i>Interview Question: What do you think it takes to be successful in implementing any acquisition reform initiative?</i>	Themes from Qualitative Analysis of Interview Data	Total No. of Excerpts	Total No. of Participants	Percentage of Participants
	Consistent message from the top	11	7	30%
	Senior leadership buy-in, support and advocacy for initiative from senior leaders	7	7	30%
	Be very specific in what the initiative says and in what is expected of those who use it	5	5	22%
	Behavior of leaders has to reinforce philosophy behind the initiative	6	4	17%
	It takes time to successfully implement an initiative	4	3	13%
	Non-acquisition perspective; initiative should be written for a broad audience and by individuals with more than just an acquisitions background	3	3	13%
	Equip people to use the initiative; teach people about the initiative, train them to use it, provide them with the resources to implement it	3	3	13%
	Buy-in from middle management (i.e., GM/GS-15s, Senior Executive Service members, System Program Directors, Center Commanders, and PEO level leadership)	3	2	9%
	Marketing, show people in the acquisition trenches how the initiative will make their jobs better, more effective and efficient, and how it will help the warfighters	3	2	9%
	Buy-in from people in the acquisition trenches and their desire to succeed	3	2	9%
	More than just support, teams have to be pushed to change	2	2	9%
	Teamwork	2	2	9%
	Hold people accountable	2	2	9%
	Focus on changing the acquisition culture	2	2	9%
	Downplay buzzwords like "acquisition reform," those words are overused and people outside of Product Centers think they do not apply to them	2	2	9%
	Ingenuity because one size initiative does not fit all programs	3	1	4%
	Trust of leadership	1	1	4%
	Leadership from program managers not functional leads	1	1	4%
	Freedom to use common sense	1	1	4%
	Empowerment	1	1	4%
	Reality based acquisitions management	1	1	4%
	Enthusiasm	1	1	4%
	Buy-in from operational leadership	1	1	4%
	Communication	1	1	4%

<i>Interview Question: What is important to you in an acquisition reform initiative?</i>	Total No. of Excerpts	Total No. of Participants	Percentage of Participants
Themes from Qualitative Analysis of Interview Data			
Focus on the mission of the Air Force and getting something to the warfighters	6	5	22%
Be beneficial to the acquisition grunts and the end users	4	4	17%
Makes sense	4	4	17%
Follow through; see it through to the end	4	4	17%
Do not make initiatives just so they are easy to measure, they should be useful	5	4	17%
Knowing the motive behind the initiative; seeing how it fits into the big picture	3	3	13%
Expectations management	3	3	13%
Improves performance	3	3	13%
Clearly defined; it is communicated well with examples	2	2	9%
Buy-in for it from all levels	2	2	9%
Leadership and advocacy for the initiative	2	2	9%
Frees people up to innovate	2	2	9%
Understandable	1	1	4%
Provides specific plan	1	1	4%
Cannot be restrictive	1	1	4%
Culture changing	1	1	4%
Does not lose what is good about current efforts	1	1	4%
Attacks other than on the margin (i.e., it attacks funding stability, requirements stability, expectations management)	1	1	4%

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14. ABSTRACT The goal of this research is to suggest a framework for developing measures of success for corporate level Air Force acquisition initiatives. Because this research is exploratory, it focuses on only one initiative: the 2002 Lighting Bolt initiative "Focus on results, not process." A qualitative method approach was used to suggest a four part framework. Through the review of literature, common steps for creating metrics were established and recurrent characteristics of good metrics were identified. Then interviews were conducted with acquisition practitioners who have experience with the initiative. Finally, those three parts were applied to the initiative as a case study and metrics suggested as a result. This study gives Air Force leaders clear, implementable metrics that can be used as measures of success for the initiative, and provides recommendations to improve this initiative's performance and that of future corporate Air Force acquisition initiatives. This study also gives leaders insight into whether or not this initiative and others like it are an appropriate and effective way to drive the changes they are meant to bring about. Finally, from a broader perspective, the framework used in this study can be used to develop metrics for other corporate level initiatives.					
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