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**CASE STUDY ANALYSIS OF TRUST AND COMMITMENT BETWEEN THE
CIVIL ENGINEERING COMMODITY COUNCIL AND THE CIVIL
ENGINEERING CAREER FIELD**

Jonnathan B. Page, Capt, USAF

AFIT-ENV-13-M-21

**DEPARTMENT OF THE AIR FORCE
AIR UNIVERSITY**

AIR FORCE INSTITUTE OF TECHNOLOGY

Wright-Patterson Air Force Base, Ohio

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THESIS

Presented to the Faculty

Department of Systems and Engineering Management

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

Jonnathan B. Page, B.S.M.E.

Captain, USAF

March 2013

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Abstract

The Air Force is pursuing strategic sourcing as a strategy for reducing costs of goods and services to help meet budget reductions while still performing its mission. These commodities are sourced through a number of commodity councils, each of which whom interact with their stakeholders throughout the sourcing process for that specific commodity. This research identifies factors that influence the success or failure of the sourcing process from the perspective of the Civil Engineering Commodity Council (CECC) and attempts to organize these factors within a framework built around trust and its effect on commitment and cooperation. These factors were identified through in-depth interviews performed with personnel on the CECC with experience in the sourcing process, after which responses were analyzed with Atlas.ti to identify themes and trends. Stakeholder support and participation was stated to be one of the largest factors impacting successful sourcing efforts, and perceptions of other factors such as appropriate training, appropriate mix of specialties on the team, experience, marketing, and successes were proposed as important to building trust in the CECC. Addressing these factors would then improve the perceptions of ability and benevolence of the CECC, resulting in improved trust, commitment, and cooperation from the career field.

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Jonnathan B. Page

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CAST STUDY ANALYSIS OF TRUST AND COMMITMENT BETWEEN THE CIVIL ENGINEERING COMMODITY COUNCIL AND THE CIVIL ENGINEERING CAREER FIELD

I. Introduction

The Air Force Commodity Councils strive to find new ways to purchase goods and services for reduced prices to support an Air Force that increasingly finds itself trying to perform its mission on a reduced budget. Historical research of commodity councils in the Air Force has stressed the importance of customer support and participation in creating and delivering successful products. This working relationship between the commodity councils and its stakeholders is vital to ensure not only that the commodity councils accomplish their mission but that the supported customer realizes efficiencies and cost savings in the commodities being targeted. As a positive working relationship benefits both organizations involved, an understanding of the root causes that may influence commitment and cooperation serves to improve execution of commodity sourcing strategies by all commodity councils and help stakeholders continue operations as budgets are reduced.

Background

As the Department of Defense (DoD) continues to face budget cuts, there is an increased focus by all branches on methods to deliver the same levels of service and capability with less money. Between Fiscal Year (FY) 2012 and 2013 alone, the DoD

budget was reduced by more than \$5 billion, and these reductions generated two of the major initiatives of the FY 2013 President's Budget: enforcing a more disciplined use of resources and obtaining greater efficiency and productivity in defense spending (DoD, 2012). To meet these goals and still perform its mission, the Air Force is striving to change the way it acquires goods and services.

In 2005, 45% of the Air Force's budget was spent on procurement and support, thereby making these processes a key target for cost reductions (Osborn & Schoonmaker, 2007). Procurement was (and frequently still is) performed at a tactical level with individual units and installations making purchases to satisfy short-term organizational requirements; this tactical and decentralized approach ignores strategic level requirements that may drive more efficient methods of purchasing and fails to take advantage of opportunities for potential volume discounts. To improve its capability to achieve savings in procurement, the Air Force turned its focus to a new form of purchasing being used in industry called strategic sourcing. The Office of Management and Budget describes strategic sourcing as "the collaborative and structured process of critically analyzing an organization's spending and using this information to make business decisions about acquiring commodities and services more effectively and efficiently;" it also states that this focus on an enterprise level of spending and requirements can result in cost savings and improved operating efficiencies (OMB, 2005). Strategic sourcing elevates the acquisitions process to the strategic level and focuses on an entire community while promoting a purchasing strategy that can successfully leverage Air Force buying power to obtain cost savings. By looking at

requirements at a higher level and purchasing a common commodity through a centralized source for an entire community, price reductions can be achieved while still meeting the daily objectives of the individual units and organizations that originally handled that purchasing (Bowman, Reed, Hudgens, & Searle, 2006).

To execute its strategic sourcing efforts, the Air Force began activating Commodity Councils. Each commodity council focuses on executing strategic purchasing over specific commodity sectors in the Air Force, the first being the Information Technology Commodity Council (ITCC) in 2003. The initial target of the ITCC was the procurement of computer systems for the Air Force, and by 2006 the ITCC reported savings of approximately \$34 million (Bowman et al., 2006). The results of the ITCC efforts suggested that the concept of strategic purchasing could work in the Air Force. In 2009, the Secretary of the Air Force mandated that Air Force Major Commands (MAJCOMs) begin building a strategic sourcing capability and created the Enterprise Sourcing Group (ESG) in 2010 to oversee all Commodity Councils, including the Civil Engineer Commodity Council (CECC) (CECC, 2011).

The CECC is a cross-functional team chartered to identify Air Force-wide opportunities for strategically sourcing civil engineering (CE) commodities and services, with its specific goals identified as leveraging Air Force buying power, standardizing civil engineering procurement requirements, developing centralized contract vehicles, and exploiting new technologies for e-procurement and reporting (CECC, 2011). To date, the CECC has already “strategically sourced” two commodities through the award of an Air Force-wide contract for future airfield lighting purchases at reduced “pre-

contract” prices and the development of a standardized performance work statement (PWS) for elevator maintenance. The CECC is now focusing on other commodities and contracts (Burt, 2011).

As commodity councils operate outside of their stakeholder career field and typically do not employ members of said career field, interaction with the actual commodity experts and users is vital to developing and delivering successful products. Commodity councils rely on stakeholders to help generate requirements, perform data calls, and provide technical expertise on specific commodities. Poor relationships between these two organizations can hamper commodity sourcing efforts and may contribute to less-than-ideal solutions. Previous research on older commodity councils have provided evidence of the importance of this relationship, and both commodity council personnel and higher-level career field leadership have noted how a successful working relationship and participation was a key to success in shifting purchasing to a strategically oriented level. However, concerns have been raised on a perceived lack of participation and support from the CE career field during CECC sourcing efforts, which may result in less effective sourcing strategies and solutions developed by the CECC.

Commitment and cooperation have been shown to foster positive performance, and Meyer and Allen (2001) have stated that willingness to contribute to organizational effectiveness can be reasonably assumed to be influenced by commitment to an organization. Additionally, Garbarino and Johnson (1999) recognized that commitment is an essential ingredient for a successful relationship. One factor affecting commitment and cooperation is trust, without which commitment is unlikely to be established, and it

has been shown that greater levels of trust in a supplier result in greater levels of commitment and cooperation from a buyer (Razzaque & Boon, 2003). However, virtual organizations encounter additional difficulties in building trust due to a lack of face-to-face interaction, but trust becomes critical for cooperation due to the nature of virtual organizations (Jarvenpaa & Shaw, 1998).

Problem Statement

Currently the CECC is centralized under the ESG, along with several other Commodity Councils, and is chartered to accomplish CE strategic sourcing contracts. There are currently no Civil Engineering career field members assigned to the CECC, although the Air Force Civil Engineer Center (AFCEC) has created a strategic sourcing position that works as a liaison through which the CECC coordinates with the individual MAJCOMs to delegate requirements and gather data. These factors, among others, may be creating additional roadblocks towards successful strategic sourcing implementation and deliverance of products to the CE career field. Additionally, concerns have been raised regarding the working relationship between the two organizations when sourcing some commodities. In particular, examples of poor stakeholder support and participation have been noted, and this research seeks to provide a possible reason for why these problems are present. This research will look at these factors from the perspective of trust as it impacts commitment and cooperation in a relationship.

Research Questions

Commodity sourcing efforts in the DoD will continue to be promoted due to the need for potential cost savings that can be achieved across all agencies. The Air Force Civil Engineer Commodity Council (CECC) is investigating multiple commodities within the Civil Engineering (CE) career field that can benefit from strategic sourcing.

Successful development and implementation of these sourcing efforts rely heavily on commitment and communication between the CECC and the career field.

To this end, this research effort investigated how the current organizational structure and processes, as well as interorganizational relationships, impact CECC execution of commodity sourcing strategies. This research identified potential problems and related issues found in current literature discussing virtual teams and trust between organizations. More specifically, this research seeks to answer the following questions:

1. What factors contribute to the successful development and implementation of AF CECC commodity sourcing strategies?
2. What factors hinder or prevent successful development and implementation of AF CECC commodity sourcing strategies?
3. What factors may impact the building of trust of the CECC by CE Functional Operating Agencies and career field MAJCOMs and what potential impacts might trust may have on the working relationship between these organizations?
4. What measures may mitigate the potential lack of trust between organizations and improve working relationships as they relate to executing commodity sourcing strategies?

Methodology

Interview questions were developed to facilitate general open-ended responses in order to draw out and identify common themes and trends, as perceived by CECC personnel, which were then be analyzed and compared to previous commodity council research. Questions were generated in three separate sections. The first section sought to clarify the current commodity sourcing process and identify cases of, or requirements for, interactions between the CECC and the CE career field. The second set focused on topics to identify factors that may affect the building of trust between two organizations. The final set of questions specifically related to factors that facilitate or inhibit success of the CECC's sourcing efforts.

Interview responses were transcribed then imported into Atlas.ti for analysis. Common trends and relationships were identified and related to an overarching model of trust as it impacts commitment and cooperation between organizations. Analysis of the data gathered helped summarize the issues impeding the CECC commodity sourcing process and facilitated the development of recommendations to mitigate interorganizational problems.

Assumptions and Limitations

This research focused on an organization within the Air Force performing strategic sourcing operations within the boundaries of an Air Force framework. As such, although the literature review focused on industry strategic sourcing, interview questions were generated primarily from previous commodity council research where appropriate.

Additionally, while there is historical data available on Air Force and DoD strategic sourcing, the CECC is a comparatively young organization that does not have an extended history of products delivered.

Significance of Study

Successful programs and contracts generated from the CECC will help the Air Force CE career field continue to provide the breadth of services and capabilities it currently does while operating on a reduced budget. This research documents factors that facilitate or inhibit success so that they may be addressed, specifically with respect to the interaction between the CECC and the CE career field. Additionally, previous research has not identified any relationships between these factors to determine how they may affect successful strategic sourcing; this research proposes trust as a reason stakeholder commitment and cooperation can depend on some of these factors. Finally, findings from this research can serve as benchmarks for other commodity councils by either validating existing practices or improving future ones.

Overview

This research effort is described in the thesis document in the conventional format. Chapter 2 provides a literature review that discusses previous strategic sourcing efforts from both the military sector and industry. Furthermore, case studies of previous commodity councils will be reviewed, with a focus on “successful” and “unsuccessful” efforts. Research discussing trust and its effect on commitment and cooperation will also

be presented, and the antecedents of trust will be discussed along with the effect that perceptions of these antecedents can have on levels of trust. Additionally, literature describing virtual teams and the impact that these virtual teams have on trust development will be reviewed. Chapter 3 presents the interview process and data gathering and qualitative analysis methods that make up the methodology of this research. Chapter 4 provides the analysis of the raw data gathered and discusses the results and subsequent insights that were gained. Finally, Chapter 5 offers conclusions and provides recommendations for future study.

II. Literature Review

The following literature review provides background information pertinent to this research effort. The first section provides a general overview of industry strategic sourcing and the implementation of commodity councils. The next section describes the Air Force's strategic sourcing efforts, including the establishment of several Air Force-specific commodity councils to meet department strategic sourcing goals. The third section further describes the creation and organization of the Civil Engineer Commodity Council (CECC) in support of the Civil Engineering career field. The next section briefly reviews previous research accomplished on Air Force commodity councils and identifies examples where working relationships between Major Commands (MAJCOMs) and functional experts have influenced sourcing success or failure. Finally, the last section describes literature related to virtual organizations and trust within those organizations. This literature review will help build the context for this research effort and be used to develop interview questions for the qualitative analysis discussed in the next chapter.

Industry Strategic Sourcing

A significant portion of business revenues are spent on purchasing materials and services. In companies such as Hewlett Packard, where up to 70% of revenue was used to buy parts for production in 2004, any cost savings that can be achieved in the acquisitions process results in significant savings (Carbone, 2004). Subsequently, the acquisitions process has undergone a transition from simply a purchasing function to management of an entire supply chain in order to achieve cost reductions. This new

method of acquisitions creates a focus on additional factors in supply chains such as “quality, total ownership cost, time to market, technology, and continuity of supply” (Rendon, 2005).

One result of this transition to supply chain management is the development of the strategic sourcing approach to an organization’s purchasing strategy. Strategic sourcing does not have a common definition in industry; instead, it has been defined in many ways. For example, Newhart (2006) defines it as “a logical and systematic process for managing and prioritizing an organization’s spending.” In a 2005 Office of Management and Budget (OMB) memo, Johnson (2005) describes it as “the collaborative and structured process of critically analyzing an organization’s spending and using this information to make business decisions about acquiring commodities and services more effectively and efficiently” (OMB, 2005). Despite the multitude of definitions, a common theme is that strategic sourcing involves analyzing an organization’s spending patterns and focusing on ways to optimize spending in contrast to traditional acquisition methods.

Traditional acquisition efforts are typically performed at the tactical level in companies by numerous individual purchasers making independent spending decisions. Additionally, these purchases are made in response to short-term objectives or immediate requirements rather than being made with regards to long-term objectives or total value. These quick response purchases often fail to capitalize on opportunities for company-wide savings. Strategic sourcing instead looks at purchasing within the context of the entire organization to focus on broader and longer-term gains to more effectively and

efficiently acquire goods and services. This strategic level focus can result in cost savings through bulk purchasing, consolidation of contracts, and leveraging an entire organization's bargaining and buying power (Searle, 2006).

Commodity sourcing focuses on creating a sourcing strategy specific to a select group of supplies or services, which are often called commodities. Success in this strategy is based on "maximizing the cost-reduction advantages of leveraging combined buying power for volume discounts, utilizing market experts to formulate a sourcing strategy, and finally, forming strong relationships with preferred suppliers" (Rendon, 2005). A general method for commodity sourcing has been developed by Lasseter (1998) called "Balanced Sourcing," which can be outlined in a seven-step process: "(1) Spend analysis, (2) Industry analysis, (3) Cost/performance analysis, (4) Supplier role analysis, (5) Business process reintegration, (6) Savings quantification, and (7) Implementation."

An explanation of these seven steps was offered by Rendon (2005), which is summarized in the remainder of this paragraph. The first step of the balanced sourcing approach is the spend analysis. Spend analysis consists of analyzing all goods and services purchased or projected to be purchased by an organization, including the total cost of ownership of a commodity, to create a complete and well-documented understanding of an organization's acquisitions spending. Next, an industry analysis is performed to identify major suppliers and to develop an understanding of the current industry environment surrounding the availability of a specific commodity. This environment can include competition, pressure on buyers and suppliers, and industry trends. Third, a cost and performance analysis is performed to determine the factors that

drive cost and the metrics that best measure the performance of the commodity. The next step involves identifying the types of suppliers needed for acquisition of the commodity in question and the roles and responsibilities those suppliers should have within the supply chain. Following that, the purchasing organization is analyzed to determine whether its processes are properly aligned to facilitate effective acquisitions by reviewing “cost drivers and supplier roles to realign business-process priorities to reflect the desired degree of integration with selected suppliers” (Rendon, 2005). Next, savings must be quantified in some manner to ensure that results can be measured to gauge success or failure as well as to promote the commodity sourcing strategy to leadership. Finally, the commodity sourcing strategy is implemented. This final step includes determining how the plan will be communicated and delegated to ensure that all objectives are accomplished.

The common method to execute commodity sourcing strategy in industry is through the creation of internal commodity councils. These councils are cross-functional teams responsible for developing the sourcing strategy for specific commodity groups using a plan similar to the seven-step process outlined above (Searle, 2006). Due to the wide variety of activities necessary in the development of successful commodity sourcing strategies, as well as the amount of information being collected and analyzed, it is important that the commodity council be populated by the appropriate mix of subject matter experts and stakeholders in the company.

There are two common benefits from commodity council efforts recognized across industry. The first is improved negotiating power through a more centralized

procurement process, and the second is enhanced “buyer-seller relationships which can remove non-value added costs and identify other areas for improvement” (Searle, 2006).

A summary of common industry actions and results is shown in Table 1.

Table 1. Industry Strategic Sourcing Efforts: Actions and Results (Searle, 2006)

Company	Actions and Results
IBM	<ul style="list-style-type: none"> - consolidated requirements of all its divisions and locations - established 17 councils charter with reducing the number of suppliers and reducing costs - reduced the number of suppliers from ~4,900 in 1993; now about 85% of IBM's \$17.1B in production purchases is with 50 suppliers - realized pricing discounts 5-10% below industry average
Hewlett Packard	<ul style="list-style-type: none"> - centralized purchasing of key commodities - top priority was to leverage their size and scale to cut costs - reduced the number of direct material suppliers by 53% from 1500 to 720 - spend 85% of their procurement dollars with just 35 suppliers - realized \$1.2B in savings from 2001 to 2004
Brunswick Corp	<ul style="list-style-type: none"> - centralized purchasing of six distinct units - set specific cost reduction goals - from 1997-1998 reduced procurement costs \$2.7M on \$22M in annual spend

Air Force Strategic Sourcing

In May of 2003, the Department of Defense (DoD) officially began strategic sourcing activities through the establishment of the DoD-Wide Strategic Sourcing Program (DWSS) (AT&L, 2006). Two months later, the Air Force Information Technology Commodity Council (AFITCC) was created to develop a commodity strategy for desktop computers and laptops. Using its own eight-step model for commodity sourcing, the AFITCC consolidated computer configurations and reduced suppliers. By the end of the year, the AFITCC was reporting a cost avoidance of \$6 million, while

enabling the purchase of 12,500 computers using the same amount of funding that originally purchased only 10,000 computers (Heitkamp, 2004).

Beginning in 2005, the OMB directed all agencies to begin implementing strategic sourcing, which it defined as “the collaborative and structured process of critically analyzing an organization’s spending and using this information to make business decisions about acquiring commodities and services more effectively and efficiently” (OMB, 2005). More specifically, the OMB directed that each Chief Acquisition Officer will identify no fewer than three commodities that could benefit from the application of strategic sourcing, while also requiring all agencies to report its strategic sourcing initiatives annually to the Office of Federal Procurement Policy (OMB, 2005).

In 2010, the Air Force consolidated all of its commodity councils at Wright-Patterson Air Force Base under the newly established Enterprise Sourcing Group (ESG), which was now responsible for enterprise-wide strategic sourcing within the continental United States. It also activated seven commodity councils within the ESG: information technology, medical service, furnishings, force protection, civil engineering, office supplies, and knowledge-based services. In executing commodity sourcing strategies, the commodity councils use the ESG process outlined in Figure 1 for its commodity sourcing strategies. The six steps in the ESG model are similar to the steps in Lasseter’s “balanced sourcing” model.

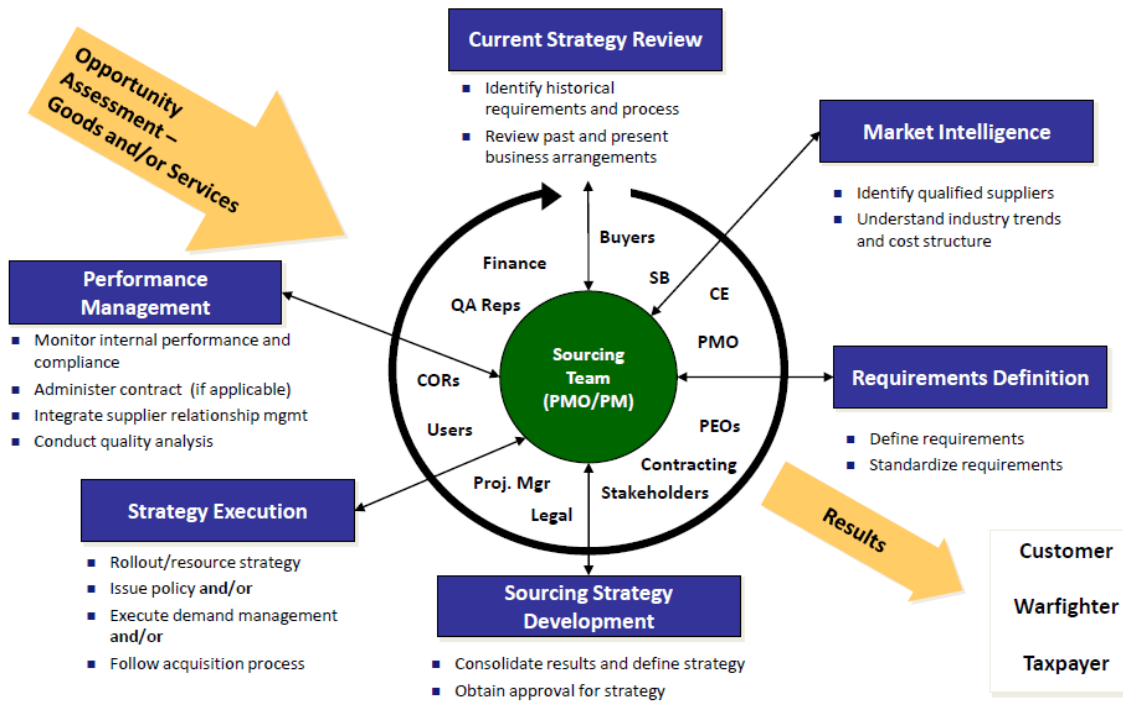


Figure 1. Air Force ESG Strategic Sourcing Process (ESG, 2011)

Before beginning the sourcing process, an opportunity assessment is performed to determine which commodities to target. This assessment identifies the greatest potential for cost reductions through inputs received from the appropriate career field(s) supported by the commodity council. Upon completion of the opportunity assessment, the six-step process is applied to commodities identified to be strategically sourced. First, a strategy review is conducted which identifies the historical requirements and acquisition processes to determine how this commodity has been purchased previously. This review is similar to the spend analysis step of the “balanced sourcing” model and generates a complete understanding of spending patterns related to this specific commodity. The next step is market intelligence, which fulfills the same function as the industry analysis step in “balanced sourcing.” Suppliers and industry trends are identified in this step which help

provide additional context to the decision-making process. Third, requirements are defined and standardized across the affected region to facilitate consolidation of contracts or bulk purchasing agreements. Next, a plan is developed to execute the commodity sourcing strategy. Typically, this plan will be accomplished through the award of certain contracts, but this step can also include delegation of specific actions to tactical-level units to modify acquisition processes and align them with commodity council objectives. The commodity councils must obtain approval at this step for their proposed strategy prior to proceeding with execution. Upon receiving approval, the strategy is executed through either the issuance of policy or the completion of internal acquisition processes such as new contract awards. Finally, the performance of the commodity sourcing strategy is monitored to ensure compliance as well as to gauge how successful objectives were met.

Air Force Civil Engineer Commodity Council (CECC)

The Air Force CECC was officially chartered in March of 2010 to pursue commodity sourcing strategies in support of the Civil Engineering (CE) career field with the support of other organizations such as MAJCOM and functional representatives. The objectives of the CECC identified in its charter are shown below (USAF, 2010).

- a) Create enterprise-wide supplies and services sourcing strategies
- b) Create and maintain strategic supplier relationships
- c) Drive commonality and standardization of requirements
- d) Minimize supply chain cost through integration/collaboration
- e) Reduce procurement processing times
- f) Minimize duplication of effort
- g) Lower total cost of ownership
- h) Leverage forecasting data through collaboration

In addition, the charter delegates specific roles and responsibilities to individual agencies participating with the CECC. Senior leadership perspective on requirements and performance metrics are provided by both the Assistant Secretary of the Air Force (Acquisition) and the Air Force Civil Engineer. Both share responsibilities as co-Commodity Strategy Officials (CSOs) for approving and executing sourcing strategies and directing the use of strategic agreements; they also review and evaluate implemented strategies for effectiveness. The ESG is responsible for ensuring the involvement of CE senior management and coordinating with Air Force Civil Engineer Support Agency (AFCESA) and Air Force Center for Engineering and the Environment (AFCEE) (both of which were consolidated as the Air Force Civil Engineer Center as of 1 October 2012) strategic sourcing leads on CE-related commodity issues, as well as implementing policies approved by the co-CSOs. AFCESA and AFCEE are responsible for supporting the CECC and serving as liaisons between the MAJCOMs and the CECC to provide technical and functional support, review strategies recommended by the CECC, and submit and analyze both current and projected requirements. The MAJCOMs are then responsible for appointing advisors to the CECC, recommending sourcing strategies, and assisting in the development, implementation, and execution of sourcing strategies (USAF, 2010).

In 2011, a memorandum of agreement (MOA) was developed between the ESG/CECC, AFCESA, and AFCEE establishing the framework by which roles and responsibilities were identified. In the executive summary, the MOA identifies the requirement for members on the CECC to be acknowledged experts in their respective

functional areas as applied to commodity groupings. Additionally, representatives should be appointed to each council to ensure an accurate representation of customers supported by the CECC (USAF, 2011). AFCESA's Program Management Office (PMO) responsibilities are expanded to further specify its role as a liaison. This role includes coordinating with MAJCOM strategic sourcing cells to identify potential commodities and develop cost analysis documents that ensure the strategic sourcing process is being used. The PMO also facilitates the process of establishing centralized contracts for commodities and collects feedback from stakeholders to assess the results. Additionally, AFCESA will appoint point of contacts (POCs) and subject matter experts (SMEs) to provide support as required (USAF, 2011). Similarly, AFCEE's PMO provides direct support for CECC initiatives if they apply to the PMO's defined area of oversight (USAF, 2011). Finally, implementation teams, extended teams, and enterprise sourcing group advisors are defined. Implementation teams consist of additional personnel as required by a commodity sourcing strategy, while extended teams and enterprise sourcing group advisors provide expert advice and support to implementation teams. Instead of assigning a set number of personnel for these teams, members are tasked as required and may be sourced from "AFCESA, AFCEE, MAJCOMs...and functional/technical experts" (USAF, 2011).

Previous Air Force Commodity Council Research

Significant research has been conducted on commodity council performance in the Air Force in an effort to identify best practices and provide recommendations for improvement. Much of the research focused on the actual procurement process itself, but

common themes were highlighted showcasing the positive and negative impacts resulting from the working relationships developed between commodity councils and career field leadership, MAJCOMs, and functional experts. Searle (2006) identified barriers to implementing strategic sourcing in the DoD. A significant barrier was the lack of a single voice in the federal procurement process that had the authority and responsibility for dictating and enforcing strategic acquisitions. This “lack of authority to require participation and enforce procurement policies and sourcing decisions,” as well as ambiguity related to strategic sourcing objectives, had a negative impact on strategic sourcing efforts (Searle, 2006). Additionally, he states that the difficulty of measuring “efficiency savings” made it difficult to promote the idea of strategic sourcing to leadership. He also cites two critical factors for a successful strategic purchasing implementation: (1) the need for leadership to fully believe that centralized procurement is necessary and (2) a requirement for a chief procurement officer properly empowered and assigned to oversee procurement operations (Searle, 2006).

In an analysis of commodity council impacts on Air Force purchasing, Rairigh and Sanchez (2004) noted a lack of flexibility in the DoD’s personnel systems as compared to industry. This rigidity can create difficulties in appropriately manning some commodity councils. Additionally, the ongoing reluctance of career fields to release personnel was noted as problematic. They also thought that the importance of strategic sourcing needed to be understood by all military personnel, specifically contracting officers, and noted that strategic sourcing efforts will affect all employees.

Cortese, Shelby, and Strobel (2005) documented a number of successes of the AFITCC, such as the gathering of information from multiple levels like “MAJCOM, base, supplier, and subcommodity levels.” Despite the understanding that the information collected was deficient in certain areas, the ability to successfully gather data from multiple sources provided them a method to successfully generate an effective spend analysis of the commodity. Cortese et al. (2005) continue by describing how the use of MAJCOM and functional representatives to “communicate AFITCC’s vision, influence buying behaviors, address customer concerns, identify user requirements, coordinate with local contracting and finance offices, and participate in commodity team decision on buying standards” was a key success in the transformation of purchasing on a strategically oriented level.

In a comparison of three commodity councils, Osborn and Schoonmaker (2007) attempted to identify factors that differentiated “successful” from “failed” commodity councils by interviewing personnel at both headquarters (HQ) and commodity council levels. One respondent at the HQ level stated that making commodity councils a mandatory vehicle was a key to success. Respondents at the commodity council level thought that “senior-level support and buy-in, full-time dedicated members, and correct number and composition of expertise would promote success” (Osborn & Schoonmaker, 2007). When discussing commodity council failures, respondents at all levels identified a lack of dedicated manning as an important factor. HQ-level respondents thought that there should be no part-time or vacant positions on a council, and another commodity council respondent stated that proper expertise was not made available. Finally,

respondents thought that a successful commodity council required buy-in from all communities and noted that the lack of education on what commodity councils do and how they can benefit the individual communities impeded success (Osborn & Schoonmaker, 2007).

It should be noted that all the above commodity council research was performed before the creation of the ESG. Mealiff and Wall (2011) performed a case-study analysis of the Air Force Furnishings Commodity Council (AFFCC) after the creation of the ESG. Respondents mirrored previous research with concerns over the availability of specific expertise missing on the council. Additionally, due to the external nature of the organization with the appropriate career field “customers,” identifying and defining requirements for each commodity was difficult. Although functional representatives had been identified, and the *Commodity Council Implementation and Operations Guide* stated that “a lesson learned is to include a ‘major’ user representative on the commodity council,” multiple respondents described a lack of commitment from MAJCOMs (Mealiff & Wall, 2011). Consequently, council members resorted to identifying requirements based on internal knowledge from past procurements. Mealiff and Wall (2011) also discuss an improvement during the next commodity sourcing strategy. During this process, an Air Combat Command (ACC) MAJCOM representative volunteered to take the lead as the customer and act “in charge of all MAJCOMs” in relation to the commodity sourcing of Air Force dorm room furnishings. This type of customer involvement resulted in a much more successful sourcing strategy. Additionally, one of the respondents noted the criticality of networking during training

events which facilitated later customer involvement in the process (Mealiff & Wall, 2011).

Commitment, Trust, and Virtual Organizations

Commitment

Meyer and Allen (2001) discuss three components of organizational commitment: affective commitment, continuance commitment, and normative commitment. Affective commitment refers to an employee's emotional attachment to an organization, including their identification with and involvement in the organization. Essentially, employees with strong affective commitment stay with an organization because they simply want to. Affective commitment includes four categories: personal characteristics, structural characteristics, job-related characteristics, and work experiences. These characteristics encompass factors such as demographics, organizational structure, and work that fulfill or satisfy employee needs or that are compatible with their values which can impact the level of affective commitment an employee feels towards an organization (Meyer & Allen, 2001). Continuance commitment, the second component, states that employees remain committed out of costs associated with leaving the organization. For example, employees may be too heavily invested in an organization to leave or there may be a lack of attractive alternatives to the organization (Meyer & Allen, 2001). Finally, normative commitment suggests that the feeling of obligation to remain in an organization results from normative pressures exerted on an individual. These pressures can include familial, cultural, and organizational pressures, but they may also develop from advanced rewards or costs associated with employment (Meyer & Allen, 2001). Therefore, in addition to

organizational socialization influencing an individual's commitment, an organization's costs for training and equipment may make individuals feel some obligation of commitment to that organization.

Meyer and Allen (2001) also discuss the consequences of commitment, with the most widely studied consequence at the time being individual tenure in an organization. While not the only factor involved in turnover intention, commitment has been incorporated as a major variable in several turnover models. Additionally, commitment has been positively related to attendance behavior in some studies, as well as individual or group-level indices of performance. However, commitment has also been shown to not relate to those same variables in other studies, making it difficult to draw conclusions about the relationship between commitment and work-related behavior (Meyer & Allen, 2001). Despite this, they state that it is reasonable to assume that employee willingness to contribute to organizational effectiveness would be influenced by the nature of their commitment to the organization. In another paper, Garbarino and Johnson (1999) also stated that "commitment is recognized as an essential ingredient for successful long-term relationships" (Garbarino & Johnson, 1999).

Trust

Razzaque and Boon (2003) defined trust as "the willingness of a party to rely on the behaviors of others, especially when these behaviors have outcome implications for the party bestowing trust. Presence of trust between parties makes one confident and contented about the relationship by reducing the uncertainty about the outcomes of the relationship." Conversely, relationships lacking trust are identified as unfulfilling and

likely to be severed. Furthermore, while both commitment and trust may be viewed as mediators to a successful relationship, trust would be a precursor to commitment. As commitment usually involves potential vulnerability and sacrifice, if trust is deficient it is unlikely to establish commitment (Razzaque & Boon, 2003). Razzaque and Boon (2003) show that greater levels of trust in a supplier will result in greater levels of commitment and cooperation from a buyer. Additionally, dependency impacts whether or not trust affects commitment and cooperation. Their study lends support to the idea that when buyers are not dependent on a supplier, levels of commitment and cooperation from the buyer depend on the level of trust in the supplier from the buyer (Razzaque & Boon, 2003). In an earlier study, Geyskens, Steenkamp, Scheer, and Kumar (1996) noted that high-trust parties maintain positive feelings towards their partners by discounting negative elements to confirm positive trusting attitudes. While negative elements were not naively ignored, fewer negative attributions were made. Additionally, when a dependent firm trusts in a dominant partner firm's honesty and benevolence, cooperative and sincere intentions are attributed to the partner firm. Alternatively, low trusting firms are more likely to scrutinize and monitor partner behavior, guard against partner opportunism, and make decisions on maintaining the relationship based on calculation of immediate benefits versus costs (Geyskens et al., 1996). Geyskens et al. (1996) also found that higher trust increases affective commitment for partners, and that trust mitigates negative effects on affective commitment that are attributed to interdependence asymmetry in the relationship. Garbarino and Johnson (1999) showed that for customers

with high relational orientation, commitment to an organization is positively related to the trust in that organization.

Additional research also identifies the role that trust plays in organizational performance and behavior. Zaheer and Harris (2006) define interorganizational trust as “the extent to which members of one organization hold a collective trust orientation toward another organization.” Investigating the literature on interorganizational trust to identify key themes, they noted two theoretical starting points for the method by which interorganizational trust is created. First, one organization must demonstrate that they trust the other, even with the risk of an unreciprocated commitment. Second, an organization must prove that it is trustworthy through efforts such as honoring commitments (Zaheer & Harris, 2006). Interpersonal factors and stability of personnel were also identified as influencing the development of interorganizational trust. Strong interpersonal relationships were noted to heighten interorganizational trust as well as improve organizational performance measures. The levels at which interpersonal trust were developed were also shown to have differing levels of effects, with interpersonal trust between organization leaders being “key for alliance formation and issue resolution, whereas interpersonal trust among midlevel managers has a greater impact on day-to-day efficiency of alliance operations” (Zaheer & Harris, 2006). Their review also identified a number of positive influences resulting from strong interorganizational trust. First, economic outcomes such as “lowered transaction costs, increased sales, and increased return on investments” were recognized (Zaheer & Harris, 2006). Next, project management measures such as task performance and continuous improvement were

positively affected. Finally, interfirm trust was noted to potentially increase strategic flexibility, facilitate greater information sharing, and improve knowledge transfer while increasing satisfaction from achieving joint goals (Zaheer & Harris, 2006).

Antecedents of Trust

Mayer, Davis, and Schoorman (1995) identified three factors of trustworthiness that are incorporated into the perceived trustworthiness of a trustee: ability, benevolence, and integrity. Ability refers to the group of skills, competencies, and characteristics that enable a party to have some influence within some area. This encompasses such factors such as aptitude, training, and experience, and is specific to a certain domain rather than all encompassing. Benevolence is the extent to which a trustor believes a trustee wants to do “good” outside of egocentric profit motives. Benevolence can consider the likelihood of an organization to put organizational goals ahead of individual goals, a trustee’s intentions or motives, and loyalty. Integrity revolves around the trustor’s perception of the trustee adhering to some set of principles or standards that the trustor finds acceptable. Integrity involves a perceived sense of justice, consistency of past actions, and credible communications about the trustee (Mayer et al., 1995). All three factors are important to trust and may vary independently over the course of a relationship. Mayer et al. (1995) propose that the effect of integrity is the most salient early in a relationship and that perceived benevolence will increase in effect on trust over time as relationships develop and additional data is developed. Additionally, the perception of actions as they relate to trust is important in the development of trust from such actions. Actions interpreted as a sign of trustworthiness can act to increase trust, but strong organizational

control systems may inhibit trust development. In cases of strong control systems, actions may be interpreted as merely responses to that control or organizational requirement (Mayer et al., 1995). Therefore, the perception and interpretation of “why” an action is being taken is important, particularly as it relates to the perceived benevolence of the trustee.

Virtual Organizations

Virtual teams are defined by Powell, Piccoli, and Ives (2004) as “groups of geographically, organizationally, and/or time dispersed workers brought together by information and telecommunication technologies to accomplish one or more organizational tasks.” Trust development differs when observing virtual organizations, but it is an increasingly important focus for virtual organizational success. For instance, Jarvenpaa and Shaw (1998) stated that trust is a means of social control and coordination and is the “defining feature of a virtual corporation.” Due to the nature of virtual organizations, where one organization or team lacks the explicit control or authority over the other, trust is critical for successful cooperation between the virtual teams. However, building trust in virtual environments is difficult. Jarvenpaa and Shaw (1998) summarize several factors that help to evoke trust such as “personal relationships with frequent face to face interactions, shared social or demographic characteristics or affiliations, expected future association, and cooperative behavior.” They also note that by nature of being virtual teams, these organizations lack the first three factors. As a result, members tend to fall back on stereotypical impressions based on past team or organizational experiences and trust between the virtual teams is hampered (Jarvenpaa and Shaw, 1998).

Jarvenpaa, Knoll, and Leidner (1998) also discuss the three antecedents of trust as they relate to virtual teams. Their research showed that the traditional antecedents of trust were also associated with team trust in a virtual-team context. Ability was shown to be a significant predictor of trust at the outset of working relationships along with integrity, with the impact of benevolence increasing over time. However, over time and after major task accomplishments, ability's influence on trust was reduced. Additionally, action was shown to be both an antecedent as well as an outcome of trust. While not enough clear evidence was provided on the relationship between action and the other antecedents of trust in virtual teams, it is possible that action may be interpreted through the three antecedents rather than on its own (Jarvenpaa et al., 1998).

Additionally, virtual teams may also result in inhibited trust development due to the methods of communication typically forced upon teams due to the virtualness of their relationship; geographical separation makes e-mail and phone-calls more common than face-to-face interactions. A regular and rich exchange of social information are necessary for the trust-building process, but "computer-based communication media has been labeled as lean because the media available is perceived to be incapable of handling rich information with ambiguity and uncertainty" and restrictions to electronic communications for long periods of time can result in impersonal relationships (Jarvenpaa & Shaw, 1998). Jarvenpaa and Shaw (1998) also summarized that individuals only receive information rich enough to begin building trust via "(1) copresence, (2) broad bandwidth that handles multiple senses, and (3) interactive communication that allows interruptability and instant feedback."

Literature Review Summary

The information in this chapter helps to provide context for this research. The strong push towards strategic sourcing in industry has met with success in multiple companies. In an effort to mirror these successes and reduce costs associated with purchasing goods and services, the Air Force has initiated its own strategic sourcing efforts through the implementation of commodity councils. Previous research on Air Force commodity councils have identified factors that influence rates of success or failure, and researchers have also noted the positive impact that the working relationship between commodity councils and their customers had on sourcing efforts. Commitment to an organization and a willingness to cooperate can impact the success of a working relationship, and both can be affected by the levels of trust between working parties. Three antecedents of trust have been identified in previous literature, the levels of which can vary independently, and the perception of these factors drive the level of trust between a trustor and a trustee. Virtual organizations further hinder the effort of trust building, particularly due to the limited face-to-face interaction and the methods of communication used, but the three antecedents of trust have been shown to still apply in the context of virtual teams. The following chapter will explain the methodology used in this research to investigate if issues of trust may be present between the CECC and the CE career field based on the perceptions of the antecedents of trust.

III. Methodology

The purpose of this chapter is to describe the methodology used in this research. The chapter will describe the case study methodology as it applies to this research effort. Additionally, the methods for data collection and analysis will be discussed. Finally, reliability and validity will be reviewed to ensure that results are supported by a sound methodology in this qualitative effort.

Case Study Methodology and Grounded Theory Method

The primarily exploratory nature of this research lends itself to a case study methodology, more specifically a theory building case study analysis or grounded theory method. This research effort focused on exploring the relationship between the CECC and the CE career field; it also attempts to explain some of the factors influencing the relationship. Therefore, there is an explanatory nature involved as well. Yin (2009) identifies a number of methodologies appropriate for the research; however, the focus on contemporary events and the lack of a requirement for control of behavioral events make a case study analysis the most relevant (Yin, 2009). Meredith (1998) states that case studies use multiple methods and tools for data collection in a natural setting, while considering contextual aspects of the phenomenon under study, without experimental controls or manipulation (Meredith, 1998). Additionally, this method of analysis adds two sources of evidence not typically included in alternate methodologies, direct observations of events being studied and interviews of personnel involved, to provide a more complete context by considering a variety of evidence (Yin, 2009). Subsequently, the goal of the case study is to understand as fully as possible the phenomenon being

studied through multiple sources of data supporting each other to ensure that the facts gathered are correct (Meredith, 1998). More specifically, the grounded theory method is a case study method focused on theory building, the procedures of which are designed to “develop a well-integrated set of concepts that provide a thorough theoretical explanation of social phenomena under study” (Corbin & Strauss, 1990).

Data collection

Yin (2009) identifies six sources of evidence for use in case studies: (1) documentation, (2) archival records, (3) interviews, (4) direct observations, (5) participant-observation, and (6) physical artifacts. The primary source of data collection was interviews of CECC personnel. These interviews were supported by documentation such as previous research and literature, manning documents, and memorandums.

The interview questions were drafted based on previous research, literature, and government documents. Exploratory questions were also developed to directly target the research questions. Fifteen questions were developed and distributed across three sections, with each section built around a certain line of reasoning. The first section encompassed questions built to create the context of the CECC’s sourcing strategies and to identify instances of, requirements for, and frequencies of interactions with the CE career field. The second section included questions related to potential issues identified in the literature review related to the antecedents of trust and virtual organizations. For example, training, experience, and marketing may have some impact on the perceptions by the CE career field on the integrity, benevolence, or ability of the CECC.

Additionally, the method of communication was identified as an important factor in trust

development in virtual organizations. The third section included open-ended questions used to identify the factors influencing success and failure in order to identify which issues impacted the strategic sourcing process at the CECC. Care was taken to ensure that questions did not imply the existence of a specific preexisting problem to reduce the chance of biasing answers towards a specific problem or factor. The final interview questions can be viewed in Appendix A.

The interview questions were then submitted to the AFIT Institutional Review Board for approval for exemption from human experimentation requirements. Every effort was made to ensure that individuals being interviewed would be protected. Interviews would be completely voluntary and anonymous, and responses would be organized by question rather than respondent to further reduce the chance of responses being mapped to a specific individual. Additionally, interviews were limited to 20 respondents to meet requirements for exemption. Once approval for exemption from human experimentation requirements was received, interviews were scheduled and conducted at the CECC.

Purposeful sampling was used to select interview respondents due to the wide variety of positions at the CECC as well as the number of interns and new hires available. To gather a broad range and appropriate depth of data, purposeful sampling was used to best identify individuals from each of the different functions, such as contractors, subject matter experts, and project managers, while avoiding new individuals and interns that had not yet had any significant experience on the strategic sourcing process at the CECC. Seventeen individuals with the appropriate experience and breath of specialties were

identified by the CECC flight commander, and an e-mail was sent out to each of them which stated the nature of the research, described the voluntary and anonymous nature of the interviews, and listed the interview questions. A sign-up sheet was then posted at the CECC for the identified individuals to sign-up for interview times.

Twelve individuals signed up for interviews, and the interviews were conducted in 30-minute blocks over 2 days. Interviews were conducted on a one-on-one basis to eliminate external factors that other responders may have on an interviewee if interviewed in a group. Additionally, by allowing interviewees to pre-read the questions in the original e-mail, participants would be able to prepare for the interview and would potentially have already generated some answers. All interviews were recorded and then transcribed for analysis. As identified in the IRB exemption package for this research, once interviews were transcribed, all recordings were destroyed to further protect interview respondents. Despite the purposeful method to identify interview respondents, some interviewees did not have any significant experience in a commodity sourcing process at the CECC. Additionally, some interviewees did not have responses for some questions as they either had no opinion or experience on the subject, one individual chose to provide responses in written form, and two recordings were either corrupted or of such poor audio quality that transcription was not possible. Finally, responses for the first four questions of the third section were consolidated under one question since respondents provided information relating to all four questions when discussing factors for success and failure. It was decided that letting responders freely discuss factors relating to success and failure, rather than restricting their discussion and continually refocusing

them on the specific question, would better facilitate data gathering in this area. The transcribed interview responses can be found in Appendix B.

Analysis

Qualitative analysis was performed on the data acquired due to the nature of the questions being investigated in this research. Two analytical techniques described by Yin (2009) for analyzing case study evidence that are applicable to this research effort are explanation building and cross-case synthesis. In explanation building, an attempt is made to explain a phenomenon by stipulating a presumed set of causal links in order to explain “how” or “why” something happened (Yin, 2009). This is typically an iterative process where a proposition is initially made and then compared to details of the case. The proposition is then revised and compared to the details of the case again. This process is repeated as many times as necessary, and is comparable to refining a set of ideas to determine plausible explanation. In cross-case synthesis, multiple cases are analyzed and findings across multiple studies are compared or contrasted to identify similar or contrasting characteristics (Yin, 2009). This method is beneficial in that it allows the use of previously performed independent research.

Atlas.ti qualitative software was used to perform the analysis on the transcribed interview data. After loading the interview data into Atlas.ti, every sentence was assigned key words or phrases (codes) that identified what that particular sentence was saying in relation to the interview question and the research effort. Codes were then organized into families depending on what the general subject of the code was, with particular focus on whether the code was presenting an idea, presenting an example of an

idea, or explaining an idea. These codes were then used to identify the factors influencing success or failure of the strategic sourcing process and the number of instances in interviews these factors appeared. Finally, the codes were organized in a network that proposed which factors influence trust development between organizations. A sample list of codes and associated quotes is available in Appendix C. A list of the code families is listed in Appendix D.

Reliability and Validity

Yin (2009) discusses criteria for judging the quality of research designs and summarizes four tests common to all social science methods: construct validity, internal validity, external validity, and reliability. Construct validity is concerned with identifying the correct operational measures for concepts being studied and can be improved through the use of multiple evidence sources and establishing a chain of evidence. By focusing on multiple sources of information and preserving transcriptions of interviews, this research met the construct validity criteria. In addition to gathering data from multiple types of sources, multiple interviews were conducted with personnel assigned different responsibilities. Proper identification of sources of data in literature reviews, data gathering efforts, and data analysis further promote construct validity. Internal validity seeks to establish a causal relationship and is supported through the use of explanation building and addressing rival explanations. This study addresses internal validity through the use of explanation building as an analysis tool when reviewing the data in order to attempt to identify causal relationships between common themes and trends and the impact those have on the commodity sourcing process. Additionally,

causal relationships were supported by the literature review. External validity defines “the domain to which a study’s findings can be generalized” (Yin, 2009) and is supported through the use of theory in single-case studies. To ensure external validity is met, it is important that this research effort not over-generalize the results; this study specifically analyzed the relationship between the CECC and the CE career field with regards to trust in virtual organizations. Finally, reliability demonstrates that the operations of a study can be repeated and is supported by developing a case study database. A case study database involves a method of organizing and documenting data collected for case studies, keeping the unedited transcriptions of interviews, and documenting sources such that the data is available to future researchers for additional analysis if necessary (Yin, 2009).

Methodology Summary

This study used a case-study analysis methodology due to the primarily exploratory nature of the research proposed and the data available. Data was gathered through interviews of CECC personnel, and interview results were analyzed to identify common trends and themes as they relate to trust in organizations. These results were related back to reviewed literature on trust and organizations as well as to previous research on commodity councils. Yin (2009) identifies common barriers to validity and reliability in case study measures; these barriers were addressed to ensure proper validity and reliability was met.

IV. Data Analysis

The purpose of this chapter is to document and analyze the qualitative data gathered during the interview portion of this research. The transcribed interviews were analyzed to uncover overarching themes, explanations, examples, and factors that helped answer the overall investigative questions for the research. The subsequent sections discuss each area in more detail.

Factors Affecting CECC Sourcing Success or Failure

Factors affecting successful Civil Engineering Commodity Council sourcing efforts were identified mainly from the open-ended questions directly asking what the interview respondent believed these factors were. However, if responses to other questions made note of a related topic impacting success or failure, it was also coded as such. Table 2 lists the factors identified from the interview responses that had either positive or negative influences on successful commodity sourcing along with the number of times a response was coded from the transcription.

It should be noted that factors were coded specifically as to how they were presented during the interview as either positive or negative. For example, stakeholder support was identified multiple times as factor affecting successful sourcing efforts. If respondents specifically stated that good stakeholder participation was important for success, it was coded as such. Conversely, those that stated the lack of stakeholder support as a barrier to success were also coded appropriately. Additionally, all responses do not necessarily encompass the entirety of the CECC and its sourcing efforts. Teams working on different commodities may have entirely different experiences; teams may be

working with different data, CE subject matter experts (SMEs), suppliers, contractors, etc. Therefore, coded responses merely indicate that such a factor exists for at least one respondent and not necessarily that the factor exists uniformly across the entirety of the CECC. More details regarding these factors are provided in the following subsections.

Table 2. Factors Affecting CECC Commodity Sourcing

Successful Commodity Sourcing			
Positive Factors	Number of Instances	Negative Factors	Number of Instances
Stakeholder Participation and Support	25	Lack of Stakeholder Participation and Support	7
Good Data	2	Poor or Unoptimized Data	11
Communication with CE	1	Poor Communications with Stakeholder	3
Clear Requirements	3	No Direction or Guidance Provided	1
Appropriate Mix of Specialties	1	Improper Mix of Specialties	1
Project Team Experience	1	Lack of Proper Experience	1
Realistic Schedule	1	Time to complete	2
Appropriate Research of Commodity	3	Lack of Stakeholder Understanding of Strategic Sourcing	3
CECC Knowledge of CE Career Field	1	Personnel Fluctuations	1
		Complications Inherent to Government Contracting	9
		Management Not Making Decisions	1
		Push for Contracts Alone	1

Stakeholder Participation and Support

The most common factor identified was that of stakeholder support, with 25 instances of stakeholder participation and support positively impacting success and 7 instances of lack of stakeholder participation and support being identified as a barrier or challenging factor. In addition to respondents merely stating that stakeholder support was important, a number of responses noted that customer engagement and interest resulted in positive project experiences, either on their projects or on other projects they had seen or heard about. Positive participation and support, especially with an understanding of the CECC and its goals, led to less pushback from the CE career field on initiatives such as data calls and research; it also led to more timely responses and more positive results. Customer interest and engagement were also noted to help define objectives and requirements for commodities of which the CECC was previously less knowledgeable as they were not the end-user of these services or commodities and lacked the technical expertise available in CE. Additionally, base-level support identifying what was important to them or what they wanted from the CECC helped guide sourcing strategies and solutions rather than having them developed out of context at the CECC. Ultimately, in order to properly create and execute commodity sourcing strategies for the CE career field, a proper understanding of those commodities is necessary. As CE has the data and technical expertise, and are the actual users of the products, their input and participation is vital to ensure that strategies being developed by the CECC work the best for the career field.

This factor is supported by previous research on Air Force commodity councils where interviews were performed on other councils. Having the commodity sourcing effort championed by a specific member in the stakeholder career field resulted in a much more successful process and working relationship with that career field. Additionally, other commodity councils in the past noted difficulties in garnering stakeholder interest in their projects, but discussed how senior-level support and supportive functional representatives was a key to success.

Data Quality

Data was another commonly identified problem across all interview respondents. Data was most commonly identified at the beginning of the sourcing process when an initial data pull is done on a commodity to help develop a basic understanding of the commodity and to perform a spend analysis. This data is pulled from databases using common key words, for example personal protective equipment (PPE), to focus spend data on the specific area being examined. However, this data may be incomplete if specific keywords are not used, may include too much information, or may include incorrect information. For example, there may be a contract with a contract line item number (CLIN) for several million dollars, but no detail on what that dollar amount encompasses or if unrelated items are included in that dollar amount. Additionally, data may have been input incorrectly, too broadly, or in different places or different ways at different installations. All these factors complicate efforts to scrub the data at the ESG; this leads to another example of where the CECC relies on the career field or base-level contractors who input the data in order to make sense of it and develop the actual

understanding of a commodity. While the multiple sources of data may complicate the execution of spend analysis on a commodity, previous research noted this as a strength that allowed commodity councils to generate an effective spend analysis despite deficiencies. Ultimately, the impact data has on success is dependent on whether the data is still accurate and appropriate.

Communication with Stakeholder

Communications as a factor was related to the importance of staying in contact with CE, as well as ensuring that the career field is kept up-to-date on and understands upcoming CECC efforts and processes. One respondent noted that the recent transformation of AFCESA to AFCEC resulted in some office changes which made it challenging to stay in constant communication with the right individuals at AFCEC, and another noted a potential unfamiliarity with communication vehicles to the CE career field. Additionally, one respondent reported an early restriction on communication with MAJCOMs and base-level installations, thus restricting the respondent's ability to obtain and provide information. This was overcome once some familiarity was gained with AFCEC and through the implementation of a Memorandum of Agreement (MOA) between the two organizations detailing communication procedures.

Clear Requirements/No direction or Guidance Provided

Requirements, direction, and guidance were also identified as factors impacting successful sourcing efforts. Clear scope specifications and requirements definition are necessary for good pricing and products to be generated. Conversely, a lack of detail

prevents accurate scoping of a project and results in a product that may not be as effective from a cost and usage standpoint.

Appropriate Mix of Specialties/Improper Mix of Specialties

An appropriate mix of specialties was mentioned, but only the number of contractors was specifically identified in this section as having an impact. One respondent felt that the large percentage of contractors on the teams resulted in a greater potential for contracting solutions to be identified as solutions. This may cloud the ability to generate other viable solutions for executing commodity sourcing. Previous commodity councils also echoed importance of an appropriate mix of specialties and felt that the correct number and composition of expertise would promote future success. Furthermore, in previous HQ-level interviews discussing commodity councils, some respondents also stated that proper expertise was not made available.

Project Team Experience/Lack of Proper Experience

The experience of the members on the project team impacts the development of viable solutions as well as how long it takes to develop that solution. While many members of the CECC have experience in industry strategic sourcing, the government perspective introduces new nuances and technical details specific to CE which can result in additional complications and increased time to completion in CE commodity sourcing.

Realistic Schedule/Time to Complete

Time was pointed out as a factor influencing success in two instances. First, setting a realistic schedule was stated as vital for project success. This is done by predicting the steps to be taken and how long each step will take in the entire sourcing

process, but some respondents felt that the teams were rushed. Timelines set may be deemed too long by higher levels of leadership, thereby resulting in deadlines being accelerated but also being missed. Additionally, scheduling accurately can be difficult due to the amount of unknowns and complexities involved in the process, and further research can introduce factors that were not accounted for in the initial scheduling phase that may delay projects from their anticipated timeline.

Complications Inherent to Government Contracting

Nine instances were coded discussing the complications inherent in government contracting and how they act as barriers to CECC sourcing efforts. The range of documentation that teams are involved with include Air Force Instructions, Office of Management and Budget (OMB) directives, DoD policies, and sister service efforts, and it is problematic to integrate everything into a successful product, especially in the service arena. In particular, small business restrictions in government contracting severely limit the solution sets available, which in turn restrict and reduce the levels of efficiencies that the CECC is able to produce for the CE community. By the very nature of consolidating or regionalizing services, there tends to be a negative impact on small businesses, and this presents a challenge not present in industry strategic sourcing. Previous research has also noted this complication with government strategic sourcing, no specific solutions have been presented. Experience may streamline future work in this area as familiarization with the different requirements and regulations yield best practices and solutions that deliver quality products within the scope of these requirements.

Appropriate Research of Commodity

A complete understanding of the commodity serves as a foundation to strategic sourcing. This relates to the interactions with the career field to supply context and technical expertise, but it also applies to market research and other forms of investigation on commodities. For example, when Federal Aviation Administration (FAA) approval of standards was required, meeting with the FAA supplemented discussion with AFCEC SMEs to deliver a successful product.

Lack of Stakeholder Understanding of Strategic Sourcing

A lack of stakeholder knowledge of strategic sourcing served to act as a barrier to success for some respondents. Respondents pointed out that discussions with the career field to determine their requirements or “what they wanted” could be difficult when the career field did not understand the context of the questions; as such, responses may not have been as useful as they could have been from a commodity sourcing perspective. Previous research has proposed that the importance of strategic sourcing needed to be addressed and understood by all military personnel that may be affected by it. This would potentially increase participation in commodity team decisions and improve buy-in from the community products were being delivered to if customers saw how commodity sourcing could benefit their communities. Additionally, stakeholder understanding of strategic sourcing can help them provide better data and recommendations as well as manage expectations for what they are expecting out of commodity sourcing.

CECC Knowledge of Career Field

This factor may be closely linked with the experience of CECC team members. One respondent stated that the familiarity with the working environment of CE helped to improve their efforts. This knowledge was gained over time as they continued to work with the career field.

Personnel Fluctuations

This factor has an impact on setting and maintaining a realistic schedule for sourcing efforts and served as a barrier to success. One respondent noted that one of their biggest issues with sticking to a schedule is considering when all the individuals on a project would be available. This can include personnel deployments, temporary duty (TDY) assignments, and permanent change of station (PCS) moves.

Push for Contracts Alone

One individual responded that they felt contract avenues were being predominantly used while they may not necessarily always be the best solution. This acted as a potential barrier to successful commodity sourcing; this mirrors other responses discussing an imbalance of contractors on commodity teams.

Management Not Making Decisions

One responded identified a challenge to their sourcing efforts being that “they (management) can’t ever make a decision on what to source, how to source it, at all levels.”

Trust as a Factor in Stakeholder Commitment and Cooperation

The most common factor impacting success that was identified in the interview analysis was that of stakeholder support and participation. In looking at trust as a possible factor that affects levels of commitment and cooperation, interview questions were asked regarding potential factors that may relate to each of the three antecedents of trust identified in literature: ability, benevolence, and integrity. Figure 2 presents an overarching model built off of relationships identified in previous literature.

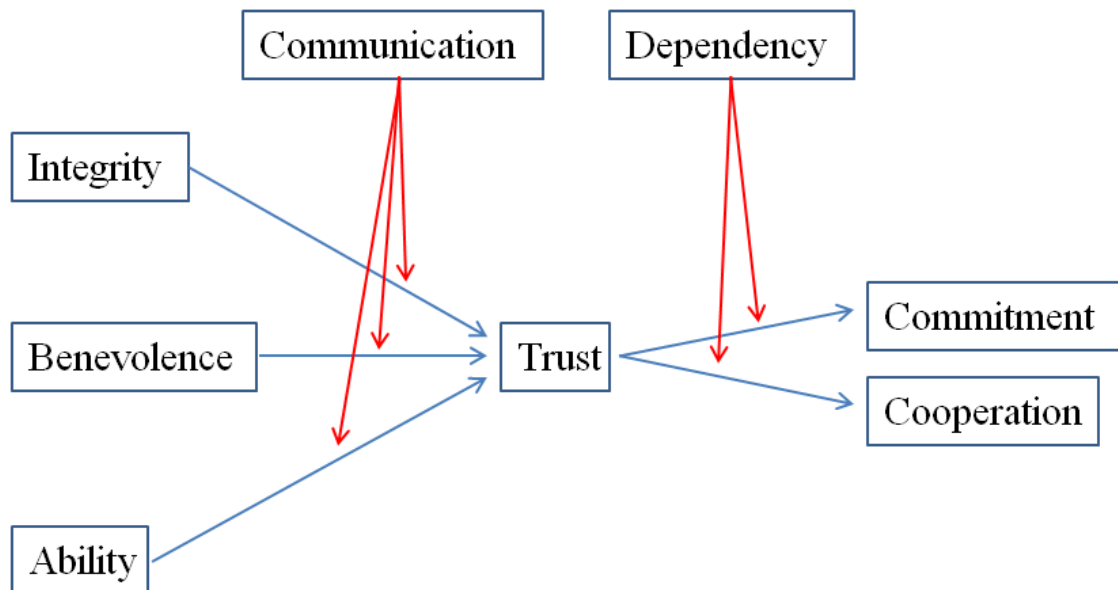


Figure 2. Overarching Model Relating Trust to Commitment and Cooperation.

Level of trust is shown to affect commitment and cooperation in the literature review, while ability, benevolence, and integrity are shown as characteristics of trust. Furthermore, in virtual organizations the method of communication is shown to have an impact on how effectively trust is developed. Finally, while not discussed in the

interviews, research has postulated that the dependency of one organization on the other in a relationship may also affect how much commitment and cooperation are affected by trust. These last relationships are shown with communication and dependency as a moderator in Figure 2.

Commitment and Cooperation

The first set of interview questions helped develop context for this research effort. In addition to general information gathering, their purpose was to identify interactions with the career field as well as issues related to that interaction with CE. Additionally, other questions revealed details associated with interactions or commitment and cooperation of the career field. The associations identified in the interview are shown in Figure 3.

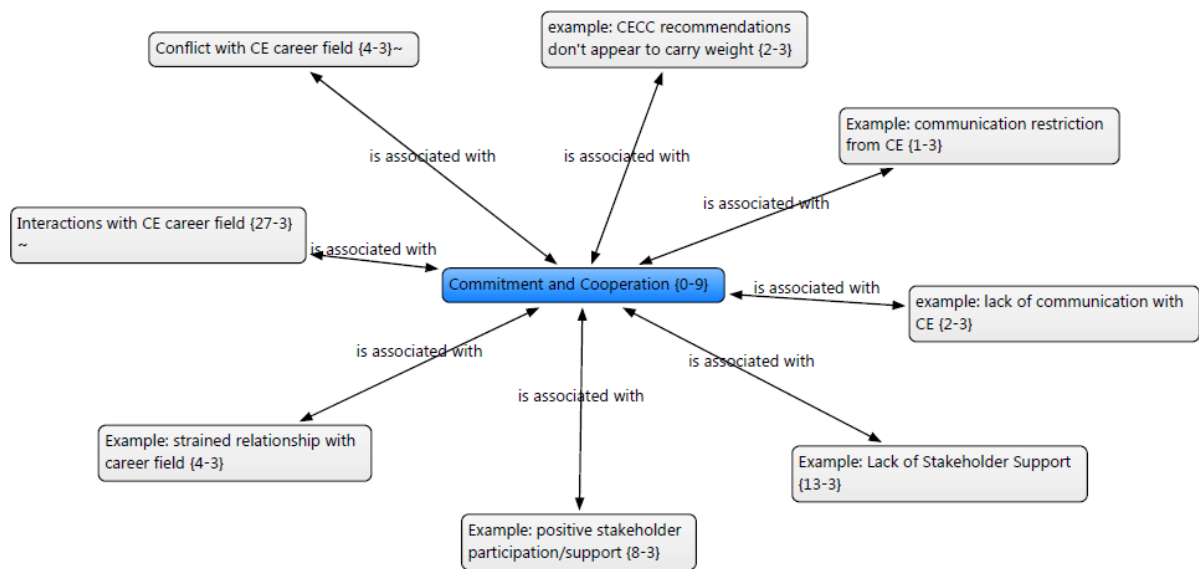


Figure 3. Identified Codes Associated With Commitment and Cooperation

The coding of the interviews revealed 27 instances where interactions with CE had taken place or were necessary. This includes individuals meeting with or communicating with CE personnel, data calls made to installations, or site visits. There were 13 instances where lack of stakeholder support was mentioned in the interviews. Examples of this include holding back information, reluctance to complete data calls, and lack of SME or base-level engagement. Despite these examples, there were also eight instances of positive stakeholder participation and support identified related to the same issues but on different teams. One responder credited some success to the base-level support that took the time to gather information and populate data spreadsheets used to solidify some sourcing strategies. Additionally, other programs noted customers fully engaged customers and SMEs. Despite the stakeholder problems that many interviewees discussed, different commodities working with different SMEs and installations may have better working relationships than others with the CE career field.

Four instances were coded where responses identified conflicts with the career field. These revolved around a perception of AFCEC or the CE career field as very restrictive and “territorial” when it comes to contacting base-level CE directly; however, one responder did state that this mentality changed as time. Four instances also appeared of a strained relationship with the career field. One individual related this to the early association between CECC and the career field and felt that the two organizations were paired up against the career field’s will. Additionally, there appeared to be an expectation conflict between what the career field thought was going to come out of the CECC compared to what the CECC actually provides, and two instances were coded

where responders stated that the CECC recommendations did not appear to carry much weight with the CE career field and that these recommendations may not be welcomed.

Finally, two responses gave examples of lack of communication with the career field. One felt that if there were more conversation at the beginning of the two organization's relationship discussing what was needed and how they were going to work together things would have been much easier. The second felt that communication was important to "getting everyone on board."

Antecedents of Trust

The middle set of interview questions focused on topics that may impact the perceptions of the antecedents of trust and therefore the level of trust in the CECC. No factors were thought to affect the perception of the integrity of the CECC, but factors such as the appropriate mix of specialties, training, and marketing were thought to affect either perceptions of benevolence, ability, or both. For the purposes of this research, perceptions of benevolence relate to the idea that factors may impact how the career field perceives that the CECC acts not only in its own best interests, but also in the best interests of the CE career field. A negative example of this perception would be of contractors working to meet their own internal quotas or price points, rather than attempting to deliver the "best" product to their customer. Perceptions of ability focus solely on the perception that the CECC is capable of fulfilling and executing its commodity sourcing responsibilities. Figure 4 models the proposed factors that affect perceived benevolence and ability of the CECC.

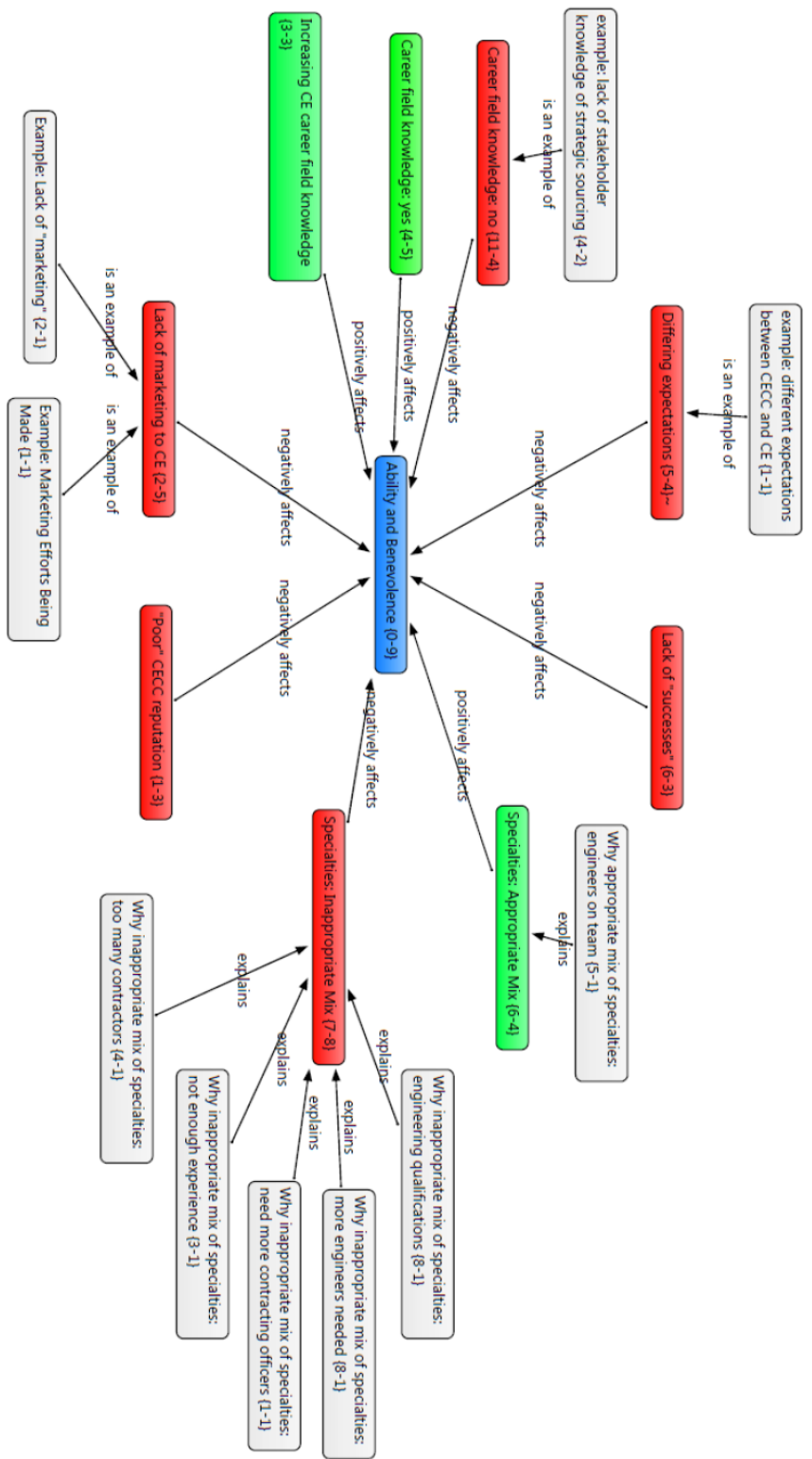


Figure 4. Factors Affecting Perceived Benevolence and Ability of the CECC

Factors that may negatively affect the perception of the CECC's benevolence and ability are a "poor" reputation, different expectations between the career field and the CECC, an inappropriate mix of specialties, a lack of marketing to CE, a lack of career field knowledge of the ESG, and lack of "successes." Factors that may positively affect perceptions are an appropriate mix of specialties, appropriate career field knowledge of the ESG, and increasing the career field knowledge of the ESG.

When discussing a "poor" reputation, the specific example noted in the interviews involved others viewing the ESG as the organization that "took the 59 contracting billets from us," with no relation towards their actual need or function of the organization. Additionally, there are differing expectations between the career field and the CECC regarding the commodity sourcing process. For example, the career field may want immediate results even though sourcing takes an extended period of time, or an expectation exists for the CECC to focus only on awarding contracts rather than identifying the most appropriate method to achieve savings and optimize a commodity. This may result in reduced trust due to the perception of a lack of action or action not seen as favorable to the career field.

Inappropriate mixes of specialties was discussed as a factor inhibiting success and focused predominantly on a lack of engineers on the CECC. As the CECC is performing commodity sourcing of engineering products and services, this could be seen in a negative light on their ability or benevolence to provide proper engineering products and services due to a lack of connection with, or understanding of, the CE career field and what they actually do or need. This perception may have improved over time with more

engineers being hired, but the career field may still see the CECC as merely a contracting organization without the knowledge needed to properly execute CE commodity sourcing strategies. Additionally, the actual experience and qualifications of members on the teams were discussed as a possible reason for an inappropriate mix on the CECC. This includes expertise on government strategic sourcing, experience with the specific commodity being investigated, and Air Force Civil Engineering backgrounds. There are still technical specialties that are not covered by the CECC staff, and this necessitates proper engagement with the CE career field to provide that expertise and commodity requirements where available. Conversely, six instances were coded stating that there was an appropriate mix of specialties in the organization. Respondents here focused on the increase in engineers over time as appropriate.

The lack of marketing, lack of successes, and lack of career field knowledge of the CECC are closely related. These all contribute to helping the CE career field understand what the CECC is, what functions it performs, and the benefits to be gained from CECC products. Lack of marketing and successes impacts the perceptions of the CECC by the career field. Increasing awareness and visibility of the CECC would help to “sell” the organization to the CE career field; otherwise, there may not be an understanding of how the CECC can support the career field and why the career field should care. Without this understanding and context, actions performed by the CECC may simply be seen as an outside organization interfering with CE functions and additional work to provide information and support data calls and technical support.

Efforts are already being made to disseminate information through multiple avenues and levels of leadership in an effort to improve marketing of the CECC.

Successes from the CECC would be executed sourcing strategies, to include contracts, standardized performance work statements, or any other avenue available to the CECC. These successes would serve to help market the CECC as well as improve buy-in from the career field. It can be difficult to get customer buy-in without being able to show results first; this can also be seen as a lack of action as related to trust. It was also discussed in the interviews, and should be noted, that the CECC is still a very “young” organization. As mentioned, commodity sourcing can take a very long time; as time goes on and more commodities are sourced and savings are achieved, more successes may help alleviate this negative factor.

Career field knowledge presented itself as a barrier in that a significant percentage of the CE career field is not actually aware of strategic sourcing or the fact that the CECC exists. When contacting individuals at the base-level, including engineers and contractors, individuals would frequently not know who the CECC was or what the CECC was doing, and this hampered information gathering and discussion. Some respondents stated that there was knowledge of the CECC, but most respondents confirmed that this was typically at a higher level such as AFCEC and that knowledge was not available down at the base-levels. However, it was stated that this knowledge at lower levels was improving, although one respondent felt that base-level knowledge of the CECC would not matter and was not needed.

Not all factors are proposed to affect perceptions of both the ability and the benevolence of the CECC. Additional factors identified from interview responses that may solely affect perceptions of the CECC's abilities by the CE career field are levels of training, experience of the team members, and the complexity of the process of strategic sourcing. The proposed factors solely affecting ability are modeled in Figure 5.

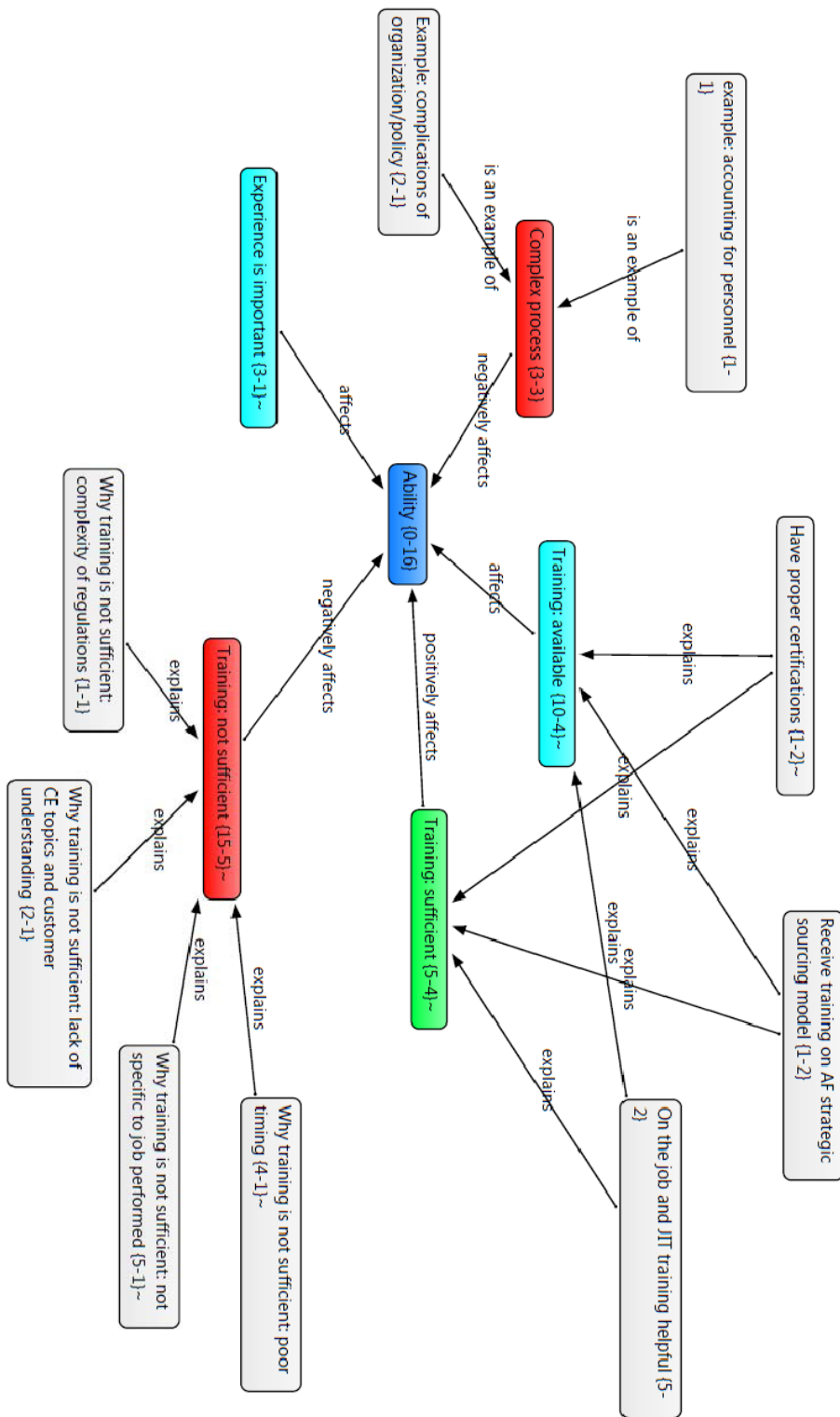


Figure 5. Factors Affecting Only the Perceived Ability of the CECC.

Questions about training asked whether interview respondents felt that the training they received was sufficient for the tasks they performed in their job. Fifteen instances were coded stating that training was not sufficient. Issues identified relating to insufficient training included training not being specific to the job being performed, specifically in relation to the concept of strategic sourcing as applicable to the Air Force rather than industry, a lack of training provided on CE topics and an understanding of the CE career field, complexity of the regulations being addressed, and training provided at inopportune times. However, a smaller number of responses were coded stating that training was sufficient. Examples of sufficient training included discussions of proper certifications being acquired, training on the AF strategic sourcing model that they are adhering to being provided, and that on-the-job and just-in-time training when necessary was useful. In addition to training, respondents mentioned that experience was important in terms of getting to know the CE career field and the commodity being investigated, as well as government regulations such as the Federal Acquisition Regulation (FAR). If CECC team members lack training or experience in either government strategic sourcing or the specific CE commodities being pursued, they may be perceived as unable to successfully execute the commodity sourcing process and produce products useful to the CE career field

Finally, three responses were coded pointing out that strategic sourcing, particularly in the government, is a complicated process. Complexities are introduced due to restrictions on sourcing in the form of rules and regulations that must be followed, the difficulty of sourcing services in contrast to equipment, and how much of CE's

budget is actually targetable for savings. The complexities make it harder to successfully execute commodity sourcing, and may negatively influence the perception that the CECC can actually achieve cost savings and optimize commodity sourcing for the CE career field due to these complexities.

Communication

As discussed in the literature review on virtual organizations, the method of communication used can influence trust building in a relationship. This was investigated in the interviews by asking respondents to identify the common methods of communication used in the performance of their duties. Three primary types of communication were mentioned: e-mail, phone, and face-to-face. These forms are shown in the model in Figure 6.

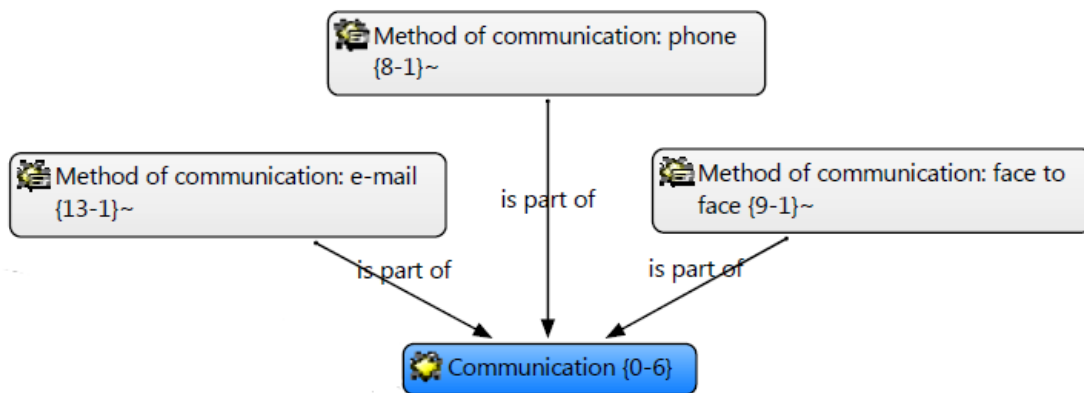


Figure 6. Methods of Communication Identified From Responses

The method of communication mentioned most often was e-mail. The second most common form of communication was face-to-face contact, but this also included interoffice communication when respondents needed to work with individuals at the

Enterprise Sourcing Group (ESG). Finally, phone calls or video teleconferences (VTCs) were mentioned eight times in discussing methods of communication. This is understandable considering the geographical separation between the two organizations, although some face-to-face interaction did occur for some teams to make trips to meet with SMEs. It should be noted that the type of communications are not modeled as having a positive or negative influence in the model. Although all three forms of communication may build trust in virtual organizations, e-mail is typically the least supportive to trust building and frequently lacks the richness of other forms of communication. While phone calls better facilitate trust building, face-to-face communications are noted as the most effective moderator to trust building in a team; however, it is inherently lacking in virtual organizations and teams.

Analysis Summary

This chapter discussed the coded results from the Atlas.ti analysis of interviews of CECC personnel. A number of factors that influenced success were identified from the interview responses, with the most common being the importance of stakeholder support and participation. This factor was further analyzed from the perspective of trust as having a positive influence on commitment and cooperation towards an organization. Examples of factors that may influence the perception of benevolence and ability were discussed to show that these factors may result in less trust of the CECC by the CE career field, ultimately resulting in less commitment and cooperation. Finally, communication methods were identified, with the most common method being through e-mail, which can

typically be a less “rich” method of communication and does not facilitate trust building between organizations as much as face-to-face interactions when working on projects.

V. Conclusions and Recommendations

This research investigated the factors influencing success or failure in the commodity sourcing process of the Civil Engineering Commodity Council (CECC). Furthermore, this research proposed a framework involving trust relates a number of factors as impacting stakeholder commitment and cooperation; factors present at the CECC were identified that influence the perceptions of the antecedents of trust by the CE career field, thereby affecting levels of commitment and cooperation. One-on-one interviews with individuals working at the CECC were performed to help identify and address these factors, and the results and insights gained are summarized in this chapter.

Discussion

Factors influencing success

The first and second questions in this research asked what factors positively and negatively influence successful development and implementation of CECC commodity sourcing strategies. Nine factors were identified that positively influence success while twelve factors were identified that negatively influence success. All factors were discussed in the previous chapter, and the top three factors were stakeholder participation and support, quality of data, and complications inherent to government contracting. These factors are also in prior research of Air Force commodity councils indicating that these factors may be common to all Air Force commodity councils. Therefore, addressing these factors from a higher-level approach of commodity councils to customer may be more appropriate than analyzing them on individual commodity council bases,

and addressing the most common factors would then promote successful strategic sourcing of all commodities across the Air Force.

Antecedents of Trust

The third question in this research asked what factors may impact the development of trust in the CECC by the CE career field, specifically what factors influence the perceptions of ability, benevolence, and integrity of the CECC. Proposed factors identified from interviews include the importance of training and experience, the appropriate mix of specialties, marketing and available successes. As levels of trust affect commitment and cooperation, controlling these factors would help build levels of trust between the CECC and the career field to help mitigate the issue of stakeholder support and participation identified above. Recommendations for facilitating positive perceptions of ability and benevolence by addressing these factors are discussed in the next section.

Recommendations

With potential factors influencing perceptions of the antecedents of trust identified, there are some recommendations directly addressing many of these factors that may facilitate an improved level of trust, and therefore commitment and cooperation, between the CE career field and the CECC. Many issues identified will pass with time or as more projects are completed. For example, the experience of team members with CE related tasks and government strategic sourcing will grow as they continue to work and execute projects. Additionally, the CECC has not been around for many years and has not had time to produce many products for the CE career field. Over time, as more

commodities are sourced and more members of the CE career field become aware of them, perceptions of ability and benevolence may increase and less resistance may be met by the CECC when engaging with the CE career field. Finally, issues such as small business requirements which may limit sourcing capabilities are unable to be directly addressed by the CECC. The impact these have on the perception of the CECC's ability to delivery successful products may instead diminish as more products in support of the career field are delivered despite the complicated generated by federal requirements.

In addressing training, two focus areas were identified: government strategic sourcing and technical knowledge on CE commodities. The current strategic sourcing training focuses on industry strategic sourcing and examples; however, industry strategic sourcing faces many less restrictions and regulations that are encountered within the government and the examples may not be applicable. Discussion or training with individuals experienced with strategic sourcing in the government, especially older commodity councils, may provide better lessons learned, best practices, and examples that are directly applicable to the CECC and their commodity sourcing efforts. Some cross-talk does occur between commodity councils, but not necessarily with all the members of the CECC.

For training related to specific CE commodities, some interview respondents discussed plans or desires to take courses at the Civil Engineer School, also on WPAFB. This would allow them to take part in some of the same courses that members of the CE career field are taking when available and appropriate. This puts them on similar ground with some of the base-level CE personnel they will be interacting with, and provides

knowledge and context of some commodities. Additionally, this allows face-to-face interactions with the base-level personnel, and previous commodity council research has shown some meetings at training events have helped facilitate successful commodity sourcing efforts.

Expertise on the commodity council is also going to be gained over time, but one recommendation identified was to pull a technical expert on a specific commodity to primarily work with the CECC during the sourcing process for that commodity. Previous research on commodity councils has identified a lack of dedicated stakeholder personnel as a possible problem factor in commodity sourcing and lessons learned have recommended that a major user representative be included on the commodity council. For example, when trying to source heating, ventilation, and air-conditioning (HVAC) retrocommissioning, while introductory training may be available for CECC teams to gain some knowledge on the subject, the expert in that area is going to be someone who has been working with HVAC their entire career and knows the systems inside and out. It may be beneficial to identify the expert within the career field and have them be part of the project rather than rely entirely on the CECC communicating with the AFCEC SMEs where available, and then base-level personnel over e-mail. Additionally, there would now be someone from CE working on the project which would help better facilitate communications with the career field.

The mix of specialties has been improving over the past two years at the CECC, with more engineers added to the team. This increase in engineers should add credibility

to the organization from the CE perspective to counter the perceived overabundance of contractors.

Marketing and increasing knowledge of the CECC is already being performed through various avenues, both internal to the ESG and from CE leadership. Information is being disseminated down from CE leadership on CE commodity sourcing, and it was mentioned in the interviews that plans were in place to include strategic sourcing in Program Action Directives (PADs) regarding CE Transformation. Another avenue that may be used to market and educate the CE community on commodity sourcing and the CECC would be through the AF Civil Engineer School's Air Force Civil Engineer Basic Course. This is the technical training that all new Air Force CE Officers attend after commissioning, and provides familiarization with the CE organization. If strategic sourcing is to be a long-term associated process with the career field, a small training block could be introduced where CE Officers are introduced to the concept of strategic sourcing and the CECC providing both knowledge of its existence as well as its goals and objectives. Rather than see the CECC as an unknown outside organization, this may generate a positive working relationship and understanding which may facilitate improved working relationships and acceptance of the CECC with these individuals further on in their career.

Finally, research on virtual organizations, trust, communication, and prior commodity councils show that face-to-face interactions best facilitate trust building and the presence of a "champion" for a commodity within the customer career field has been vital for success. While this does not necessarily involve moving the two organizations

closer, both physically and organizationally, previous success has been noted with interaction between the commodity councils and the stakeholder in person at training events or TDYs to meet face-to-face. While personal interactions do not completely mitigate any potential trust problems, they do have the potential to reduce strained relationships and interorganizational conflicts.

Recommendations for Future Research

The conclusions drawn in this research provide areas for further study. Factors that were identified in the interviews were associated with antecedents under the assumptions that they may impact the perceptions of each antecedent. However, further research could be performed in order to test and confirm whether or not each factor would, or does, affect one person or organization's perspective on that antecedent of trust. For example, this research proposed that a lack of engineers and overabundance of contractors reduces the perception of benevolence and ability of the CECC. Research and interviews could be performed on members of the CE career field, from AFCEC SMEs to individuals at base-level CE squadrons, to investigate whether or not they perceive these as problems or not with the CECC as well as if it negatively impacts their trust in, and therefore their commitment to, the CECC. These results could then be used to verify the accuracy of the relationships between these factors, trust, and stakeholder commitment and cooperation. Additionally, the coding of the interview responses is open to subjective interpretation on the part of the researchers and the interview transcription includes additional information not applicable to this research effort.

Further analysis can be performed on the interview transcription that may identify different trends in the data available.

Summary

In an effort to facilitate successful commodity sourcing by the CECC, this research identified factors believed to influence successful sourcing efforts and factors that may result in decreased levels of trust by the CE career field resulting in reduced commitment and cooperation with the CECC. Stakeholder support and participation was most commonly mentioned as a factor influencing success, and components such as a lack of appropriate training, inappropriate mix of specialties on project teams, and a lack of marketing may result in reduced perceptions of benevolence and ability on the part of the CECC. These components mirror findings from previous commodity council research, and the resultant lack of trust can negatively impact the working relationship between the CECC and the CE career field. Mitigating these issues and delivering successful products would continue to improve the credibility of the organization in the eyes of the CE career field and increase stakeholder support and participation. Other Air Force Commodity Councils find themselves in similar situations of supporting customers distanced both organizationally and specially, and findings and recommendations applied to this research may also apply to other commodity councils encountering similar problems.

Appendix A. Interview Questions

How are your commodities for sourcing identified? What factors are used to determine which commodities are to be considered?

How do you collect data required for your part in the commodity sourcing process?

How do you develop implementation strategies for identified commodities?

How are implementation strategies communicated to those involved in implementing the change?

How is the effectiveness of commodity sourcing implementation being tracked?

What methods of communication are most commonly used in your work interactions (face-to-face, e-mail, video conferencing, etc).

Do you receive any specific training for your position? If so, do you feel that you received the appropriate type and amount of training for your position?

Do you feel the CECC has the appropriate mix of specialties (or AFSCs) internally for the performance of its responsibilities? If not, what areas or specialties do you think should or should not be included?

Do you feel (or find) that the CE career field as a whole knows about your organization and what you do?

Previous commodity council research has shown that participation and commitment from the supported career field impacted how successful commodity sourcing strategies were. What measures (if any) are in place to create/maintain cooperative relationships with the CE career field?

What factors have most contributed to your successful sourcing efforts?

What barriers, impediments, or challenges (if any) have you encountered in your part of the commodity sourcing process (i.e. policies, culture, skills, organizational structure, information, disincentives)? How were they resolved?

What do you think are the most important factors that facilitate successful commodity sourcing efforts?

What do you think are the most important factors that could potentially hinder commodity sourcing efforts or create additional challenges in the process?

Have you looked at other commodity councils to identify issues they have been having? If so, what measure have they taken to mitigate their challenges, and have you implemented anything similar?

What changes (if any) would you implement to the commodity sourcing process to improve it?

Appendix B. Interview Responses

How are your commodities for sourcing identified? What factors are used to determine which commodities are to be considered?

So they look at the spend, and that's a big thing, now I have issues with that and I know others do and you know let's look at the processes, rate/process/demand. I think this was decided by the previous leadership, so there wasn't any CE reps here, and so the CMP drove this, and what're they going to look at first? They're going to look at the spend, the big dollar items, you realize wait, there's maybe not really that many savings, you just can't grab a thing and that'll be your savings, it doesn't work that way. You're going to have to look at the process and how we do things. And so that's what they looked at, but I think we're shifting now more towards looking at our processes **Are you locked into the CMP?** Yes and no, CMP1 which is what we're working through, but we're looking at a CMP 2 for new processes, things, spirals, anyways that's what we're looking at and we have a whole bunch of ideas and there's a whole bunch of ideas that we haven't even touched that we may need to. But yes, the biggest focus was on the spend. Well, then let's keep peeling this back and we're trying to advocate that by going to different forums, like trying to brief at the Programmers Conference where we brief all the MAJCOM programmers and letting them know about this gap and what other initiatives can we get, and talking to ops guys and talking to base levels to keep generating different ideas. There're other options, too, for example when they put their budget in, all the MAJCOMs took efficiencies but didn't necessarily share them with other MAJCOMs so maybe we can take that and try to see what we can spread across the other MAJCOMs.

What they did is looked at spend, and that's how we came up with the commodities in the first CMP.

Everything I've been involved with has been driven by the CMP that we've established under the CECC, there were a number of different areas that were queued up with a timetable eventually and I'm sure someone's already talked you through the process used to evaluate all of CE. Whether we go ahead or not is done through an opportunity assessment, that's the key factor, do we really find, having done some initial research on the areas we've identified, does it look to make sense to source. The factors of course you'd look at are things like difficulty, time, projected savings, risks associated with moving ahead, do we know who the users are, so that's really the needs for that one.

There're proven methods to do that and a lot of it looks at spend like how much do you spend on this commodity or service, numbers of suppliers, how many suppliers supply this commodity or service, those're probably the main two. Spend is typically what you look at to think about big savings, but there are a lot of opportunities that are overlooked like surge protectors were brought up and someone asked 'well how much do we spend on those' and they said 'probably not that much' in air force terms, not hundreds of

millions of dollars per year, but the opportunity where we could kind of get a head of the curve and say 'if we don't strategically source it early' it could become a big spend area down the road so sometimes we may need to think outside of the box.

Identified from combination of sources that may include CMP, field interest/issues, and senior leader interest or direction. Factors may include historical contract spend, workload, projected requirements, sourcing complexity, level of expected user participation in solution, and core team expertise, projected savings. Far from exact science and ends up being a judgement call; recommend reviewing the opportunity assessment model.

Well, basically we're told which ones are going to be sourced, by the time it gets to our level that's either come out of the CMP or somebody somewhere has done a high level look to say look it looks like we spent a lot on this maybe we should go look at that. It's usually at some point coming from a higher level, somebody's looked at that spend and they said 'that's stuff we spend a decent amount of money on.' Maybe occasionally there's thing on our website where people can input things there so something might come out of there. The ones I'm on particularly was actually a while back AFCEC did a thing on it to find out what they spend on it and that's how it ended up on the CMP and the other one was sort of their idea as well so a lot of it comes from the customers, too.

They were somehow picked by a group of people because of dollars and money spent, and that's all that they looked at and they gave it to us and said run with it. Now the new strategies are going through a more formalized process called an opportunity assessment, I think they look at them in dollars, and is it feasible to strategically source these instead of the old ways like where if there was money, do it. Going forward, they have a committee now and champions so it's a more formalized really thoughtful approach which is necessary. It's getting there, we're a learning organization.

How do you collect data required for your part in the commodity sourcing process?

Well it really comes from both places. The initial spend data will usually come from EGB which is part of ESG on the other side of the tracks. They'll go into CBIS and pull the spend data. Now that's kind of a generic pull because unfortunately it's not really solid data so they'll just kind of do keyword searches and so they'll get a lot of stuff that we're just not worried about. They will then go through and scrub that data and try to get rid of stuff that isn't applicable to what we're doing, and then they'll give us spend data that we kind of look at. What we also do is go to bases to talk to them, find out from them how exactly are you guys buying this stuff. 'What do you think you spend on this stuff?' It's market research, a lot of market research, going out and talking to vendors, what does the market do that we don't do? So we get it from a lot of places.

Depends on what step of the process you're in. For strategy review, collect data from various data systems including finance, CE, and Contracting (CBIS, EDA, EZQuery), interviews/questionnaires, visits/data calls with base-level CE and CONS squadrons and review of existing regulations/statutes/policies via internet. For market research, data sources include primary research from industry conferences/symposia, meetings with representative suppliers, and Requests for Information (RFIs). Secondary research sources include various internet sites such as trade associations, company annual reports, Dun and Bradstreet, IBISWorld, Small Business Administration, and Department of Labor, and best practices comparisons with third parties (such as Integrated Facility Management firms or other large organizations comparable to the AF).

They'll give us contract numbers and I'll go out on to data systems to try and pull as much information as I can also like funds obligated and CLIN structure and sometimes they'll have statements of work attached if we're lucky. A lot of the folks over on the other side will pull things like spend analysis for us and we use a lot of what they already supply us, and if we need any additional information we'll go out to those databases that we have access to to get more information.

It's very complicated, we go to industry, we go on the internet, we go through several different programs, and then we go through contracting data to get all the numbers and we analyze all these reports and information which happens during the opportunity assessment which sort of tell us yay or nay for strategically sourcing. It's shoddy data, and what I hear is that this new Next Gen IT for CE is going to solve all this.

Data goes through the CBIS, ACES, IWIMS. **Is this done through your or the spend analysts?** Yes and no, so the spend analyst does, but a lot of times they're locked in on a NAICS code, and you get for example for fire PPE which I was a part of, they get all sorts of stuff, not just PPE. Same with water where they pull everything associated with water. And what they're locked in here is they're locked in CBIS instead of looking at ACES, IWIMS, etc. So myself and xxx both have ACES/PM access so fortunately we're able to pull direct from that.

We have spend analysts that do that and dig in detail, however they're going into their system from the ESG side into whatever information systems are available like ACES/IWIMS to look at spend data and number of suppliers and number of contracts and what types they were. The way past data is actually collected is done by these reports every time a contract action is done. Everytime a contract action is done you have to fill out a report that says what it was for, how much it was, is it a small business set aside, what the NAICS code was, EPA compliant materials, and you fill out all this information and the info that goes into there is the key to understanding the commodity. But, having been the guy putting that information in, we're just screwing around and trying to put in whatever makes the system work which leads to garbage in and garbage out. So we definitely end up going to the bases, for roofing for example we felt we needed information that we couldn't find in these systems and then we reached out to the CE

functionals and asked if they could tell us stuff like roof types, square footage, number of penetrations, whatever else we needed. That happens a lot through data calls, typically a pretty time consuming process and burdensome on CE when they have to go through their records. There's an expectation conflict on getting data, too. When I was kind of new to the organization I said I was just going to go after this information and I was just going to call the people that have it and they should say 'great, I'm on your team, I'll help you out, let me send it to you.' That's not what was established at the beginning so I kind of got a 'hey don't do that.' But I still do that, if I see a contract specialist on there and I want to know more about it and I call them and ask if they're not busy if they can spare 10 minutes to tell me about a purchase so I think there's a lot of value to that. **Any details on that "hey don't do that?"** It was to CE, but I think the thing was that I wasn't soliciting any specific information in regards to a specific contract or information, I was just put in contact from a friend who knew some CE guys so the e-mail I sent was more of a "hey I'm kind of sending this because you know my buddy and he mentioned you might be able to help out, so if there's any general academic reading about roofing or know someone who knows about roofing let me know so I can check into it." They forwarded it somehow and it got to AFCEC and they lost it. The mentality changed a little bit after and it came into 'ok as long as you let us know about it you can contact it' or 'send it our way and we'll forward it on' and I'd much rather have it coming from a CE person anyways.

We have Air Force databases any way that we store documentation, however not every air force unit stores it in the same place in the same way, so basically we take all these pieces of information and we sometimes have to put it together to make the story; this base and this contract is providing all these different data points to make the whole. There's no real consolidated system we're pulling from the bases, and we don't do a really good job and that's why we're the highest buyer of soybeans; they ask for the NAICS code, and everybody puts in 11111 because it's easy, it's soy beans; well you're buying roofing it should be 238160 so when we're looking at dollars we know where the money was spent. We're working on that, it's part of our initiative in CE is to get our CE people to use the right codes. Money-wise, we do have EGB flight, they're a support flight to us, and they pull out all of the money and look up the NAICS code and do the best they can to determine how much we're spending, what kind of contracts, IDIQ/full contracts, and then scrub it to see if it's really using the right code. So there's many different ways, we are information gathering people, we do a lot of that.

It's a combination of things. Our first step is really to look across the trainway to the BSG folks and ESG, we're told they're the ones to draw down the data from CBIS principally and they run a big filter and then work it down to hopefully spend that is targeted to the area of focus you're looking for. Because of the frailties in the CBIS system, it's difficult to impossible to say you've got it all, and if you have things, you may have things in there that don't really apply to your areas, I've seen that circumstance. Particularly, there's circumstances where there's a single CLIN for several million dollars associated with a CE area, but there may any number of different things

featured into that total and I don't believe those guys are at a level that can really get down and dirty into the numbers, you'd really need the original contractor in it saying how did you develop this two-million dollar number, so that's a huge challenge in my opinion. If there was one area for improvement, from a management/enterprise perspective, or larger than that the DoD or Federal Government, to be sure that you have good data developed for the spend that you have. Another area you can't even lay hands or eyes on for most parts if you don't go out for a data is the PCARD (procurement card), which depending on the arena you're in could be very significant, so that's kind of where we're at and we really rely on this BSG. We have data calls and there might be some sources sought notices, among other things.

How do you develop implementation strategies for identified commodities?

It really depends on what the needs are for the customer, and right now we're analyzing sources sought responses that we posted out to FED BIZ OPS and we got about forty responses and we had already gathered some market intel information and we've gone down to a conference to meet with businesses so we're still having some gaps with small businesses which is why we're doing the sources sought. So we're going through and gathering information from that to find out capabilities, histories, and project experience forms, and based on that it helped us determine if we're going to do a multiple award IDIQ or look at just awarding one large business or are we going to go with three large businesses, so it's really on a per-project basis.

We brainstorm it and from what's happened out in the field we analyze that because some of them do PWS's some of them do policy letters, and we analyze the whole concept and figure out the best way forward.

It really depends on how things ultimately lay out. There's the whole rate/process/demand thing, and so it's how much we can control any of that. If we look at the rate, the rate would probably be more of a contracting aspect, but if we look at the rate, and unfortunately it's a lot of the government regulations that stops us. We can't go out and say we want one contract for the entire air force, because that wouldn't work for small businesses because they just couldn't handle a national contract, so that tends to change your focus. So ok, we can't do the national one, what about a regional one, maybe you can, maybe you can't. If you can, maybe it's not worth it, maybe you don't think you'll see the rate savings you would think. Some of the ones we decided that the rate change is there and something we can affect with a contract vehicle, but on the other side of the tracks they'll write BPA's against GSA, and we've done the same thing here, so the implementation really depends on in some respects what's the biggest bang for the buck. Or can we change the process, is there something we can do that'll save us money where we don't even have to write a contract.

I've not gone to that point yet, but I've had a number of different projects I've been involved with that were passed on to someone else or derailed due to opportunity assessment results, but best answer I have is there is no standard implementation strategy point of view. There may be multiple ways to approach, and each one is to be vetted, when you come to the point where you're ready to come before the CSS panel with the different ways you might approach this and in terms of what kind of contracts. If anything, I think there's been in my time here, decidedly now if it's going to take us a year and a half or two to get from front to back of the 7 step wheel maybe we ought to rethink if there's some alternative given what we see to establish a policy or in some way a different approach to force the user community to buy things in a more cost effective way, let's move ahead with that, although this might not have been how it was traditionally looked at.

From my experience, they think we should just do a contract and run with it, whether a contract is necessary or not or the right solution, it doesn't matter we're stuck with a contract. Even though when they preach strategic sourcing, they always say it does not always end up in a contract, if we say we have a policy we get pushback because we didn't have a contract. We're working on that and we have some new people that are working on that so I think there will be changes but from my experience it's all contracts.

We have to use common sense, but for example elevator maintenance was driven to a policy letter because of small business, there's way too many small businesses involved so you just couldn't do it to reach that point or make that decision. But you try to keep a very open mind, gather all the data, and try to come to the best conclusion. Everybody automatically thinks it should be a contract, and it's not, and it doesn't. And we even have a briefing that states as such, it's not necessarily a contract.

After evaluating research, identifying potential savings methods through one of three "levers": Rate, Process, and/or Demand. Research should suggest improvements or changes that can be applied in one or more of these areas to achieve savings. The team reviews the potential changes with the field to validate that the changes can likely affect the desired change while continuing to meet their operating requirements in that commodity. For example, consolidated contractual instruments are considered to drive lower unit pricing on a commodity. These also often drive workload reduction or time savings by CONS, yielding a Process efficiency. Standardization can drive a Demand efficiency. The implementation strategies are developed in Step 5 and are ultimately approved by the co-Commodity Strategy Officials.

How are implementation strategies communicated to those involved in implementing the change?

We do have a communications team, I am a communications person, so we look at who needs to know what so we keep a list, a tracking sheet, depending on what information has gone out, who the audience is, usually the program manager will help come up with something. Certain things with our CE stakeholders were not very receptive to us at all, lot of information had to flow from Col Knipper's desk down, we've gotten a little bit more leeway, we're allowed to push some stuff out, but we have a communications person and flight and then each one of our projects will have somebody and we'll just get to know our stakeholders and information so we all know what's coming and going.

We can do a mandatory use letter that we'll communicate out to them. We do have a change management department here in the ESG and we work with them as far as communications, but that kind of depends on the project as well, who's going to be the end user and what's the best way to communicate out to those folks.

They should first be reviewed with the field to identify feasibility, impact, risks, etc. Once approved by the co-CSOs, the Team should communicate the intended changes as widely as possible, using AFCEC and MAJCOM A7Os as primary conduits to the CE community. Communication mechanisms include postings on various internet sites, e-mail notifications, meetings/concalls, informational articles (in CE and Contracting publications), documents such as FAQs and "Did U Know?"

I'm not sure the word is getting out. We did the taxiway light project, and we did finally get a mandatory use letter, which took a year because it got lost, they had to change an and to an it, it was a nightmare. So, it went out to AFCEC and then they were supposed to send it out to the Civil Engineering MAJCOMs and I believe that it also went through the PK channels.

It takes a long time, like 18 months from what I've seen. The problem, though, isn't just because it's Gen. Byers and routing it through. The issue is the dollar amounts and what you're trying to do with the FAR, that is a limitations. I could easily route something up, and yeah they're going to have to review it, but it's the FAR and the regulations and going through the contracting rules. The whole contracting piece is the big piece, when you go contract that's what takes the length of time, so for strategic sourcing that's our huge limitations.

That's usually the hardest part, we do have some change management people that work on the other side of the tracks, and we do have communications plans that we try to use, like the Did U Know docs, and they'll try to run that down. But that's something that I think is a real focus right now, and it's going to change, because we've even talked to PKO across the tracks and they're saying 'oh we didn't know that existed' and we're right across the tracks. So I think communications is a hard part right now trying to get it filtered down to the bases in that we exist. We pretty well have to go through AFCEC, that's kind of the way they want it. It's gotten better, they've kind of loosened up a little bit. It used to be very strict, where 'you can't talk to the bases, you go through us' and

now we'll kind of get points of contact from them, and be able to contact those guys directly. But mostly from our point our information flows down from AFCEC.

Face to face, e-mail, video, yep. Mostly here, though I haven't met my counterpart at AFCEC, and that's a big piece of it, but I haven't met xxx, so a lot of that is conference calling and e-mail.

How is the effectiveness of commodity sourcing implementation being tracked?

The biggest thing here is savings with energy funds, so that's to be determined at this point.

They're continually managing that project, so they look at the efficiencies, look at the rates, for example the taxiway lights they're working with AFCEC they're talking with the different bases, answering questions, how is it doing, just continually managing that project. **Is data pulled from the base or is that available here?** No, we pull it from AFCEC, they have their list of which bases have what lights and they're able to access that information.

Tracking the metrics is very difficult, partly because we don't have good data to start with, so I'm not really sure, I know they have spreadsheets they use, and they'll get a hold of the orders, but none of the ones I'm involved with are at that point yet.

We have this big dashboard, and we measure rate/process/demand. Rate is the cost of the fixture, what we paid for it in the past which we have from the data call compared to what our contract pricing is now. It's a multiple award IDIQ contract and competition has been great so we've seen great savings. Demand is a little harder to measure because energy savings you're going from 50kW to 5kW and it varies from every airfield for how long lights are on because of the mission so we've got an equation for that. And we did baseline Lackland because Lackland does monitor their taxiway fixtures alone, not in the total airfield so we can get their numbers and baseline with them.

Tracked by implementing Team on a manual basis through numerous means depending on the solution implemented. May include gathering data from data systems, interviews/surveys of field users (CE and CONS), recurring reviews with contract awardees, reports from contract awardees, and CPARS/CCAR reports. Ultimately the effectiveness of the implementation from the ESG's perspective is measured in efficiencies (dollars). This is tracked by CECC in a spreadsheet that is used to report F1.8 efficiencies to AF/A7C on a monthly basis. The Team also tracks efficiencies for bi-monthly reporting to the 771 ESS Squadron Commander.

With taxiway they just have their data requirements, I think monthly how many fixtures they've sold and are all the bases covered. With roofing they're probably going to do the same thing when the contract is put out, we'll have a requirement for data and we have bad data, a lot of us have bad data, so for some of it it might be the first time we're seeing good solid data and so we'll track that and have something to look back on in future years, so we really have no benchmark right away, but we're gonna ask for data. It's going to be the same way we're communicating everything else, we're thinking probably a monthly requirement, it's definitely part of our plan to have the data because it's the only way we know if we're successful.

One of the challenges we all have as a program manager in any of these initiatives is how are you going to track your savings whether it be rate/process/demand, that's one of the things you have to think through and clearly understand who it is and how it is we're pulling that information together, whether we're relying on the contractor or relying on our own personnel or some combination thereof, to monitor the effectiveness of the strategy, whether it be a policy or a contract. To me, it's thinking through how it is we're going to track, what we're going to track, that'll drive that quarterly savings responsibility, and of course this goes outside into the CE community down at Tyndall and the heads of state down there. There's no unique method, but my own personal perspective on this is to require the contractor to give us the information as to the spend that goes through the pipe, but it's entirely unique to each situation; we'd then gather all the info that's summarized and analyzed to look at results of spend, calculated savings against the contract in contrast to whatever the established baseline was, which is another important element to how you're calculating savings. Once these business support folks have drawn down historical spend data, they'll draw off task order information and contract information that is then put into this tool that'll derive what the historical cost annually to go about doing the buying activity we've historically done in this targeted area. Depending upon the selection of the type of contract or the kind of approach you take, we then will track actuals against that in terms of task orders and calculate the difference. Again we're just talking about process and that process is solely based on the contractual elements.

What methods of communication are most commonly used in your work interactions?

E-mail, I'd say largely e-mail. I've been on this base for a long time so I know quite a few people, and I started out in Civil Engineering and a lot of those people are still there so I communicate with them via e-mail a lot. But I have been reaching out to other Civil Engineers asking them questions about water-leak detection asking if they've done it, how they've accomplished it. **Do you go straight to base level?** I do, but I'll probably hear about it, they're very territorial over at AFCEC/AFCESA.

Face to face, e-mail, DCO. I talk to everybody, industry, AFCEC, Air Force people, everybody.

I work mostly on the telephone with the folks down at Tyndall, SMEs, and e-mail and I don't know any of them previous in any means, but I may have met one or two, Col Reynolds was down here a while ago and I kind of met him in a hallway discussion as he was wandering through here, but beyond that it's mostly telephone calls on specific issues or questions and e-mail exchanges for requests for information and clarification, and that holds true with the SME's. I mean it's not as easy as walking down the hallway and talking with folks but generally speaking they're generally responsive. There has been a challenge, there's been instances when you go out with a data call particularly, unless you get that, it kind of drives from up high, the folks that set the pecking order of what's important, but if you gain their ear you get a pretty wide berth and word gets done when you've asked for it. But if you're kind of trying to go from the bottom up, generally speaking it's much more challenging when they're saying well I've got 50,000 other day job things going on.

I'm more face-to-face based with the folks here in the ESG. Now I have made a trip to Tyndall to work with our counterparts down there with AFCEC, and then some phone-calls with them. **What was the purpose of the trip?** It was to meet with the engineers down there, because they're the ones that actually control the funds for the project, so we were meeting with their experts down there.

Most commonly e-mail and phone comprise the majority of communications, as we need to gather information from geographically separated bases, subject matter experts, and potential suppliers. Face to face interactions are preferred but more difficult to achieve in the constrained budget environment.

I do face-to-face within the office, e-mails, phone-calls within the career fields with all the different people.

I would say e-mail is a big one. I would say it's a combination of e-mail, conference calls, and maybe go down there and meet with the customer a couple times a year. **Meet with customers for what?** Working on specific projects and trying to move them forward, so we'd go down there and meet with the subject matter experts, so that definitely helps.

E-mail, of course we're all on e-mail, and we use DCO, not video. Wright-patt has a really hard firewall to get through so there's a discrepancy between voice and picture so we just do DCOs and we'll put the slides up. So we get on the conference call and they'll run the slides and it works really well. On a day to day basis it's just e-mail back and forth.

Face to face, e-mail, video, yep. Mostly here, though I haven't met my counterpart at AFCEC, and that's a big piece of it, but I haven't met xxx, so a lot of that is conference calling and e-mail.

Usually it's either e-mails or phone calls. We pretty much deal with AFCEC. Other than the change management people, we usually don't communicate across the commodity councils themselves because we're doing different stuff so ours is pretty much communicating with our customers.

Do you receive any specific training for your position? If so, do you feel that you received the appropriate type and amount of training for your position?

As a program manager I'm required to be APDP Level II certified. All CECC staff receive training on the 7-step AF strategic sourcing model. I would have liked to have received more training on various Civil Engineering topics so that I could better understand my customer.

Well in my case it's the very same training I've already seen, but yeah I think it's useful to some of the newer guys, the CE guys who just started working here recently. It's a challenge though, but I never had the rules-bound orientation we have here which is one of the biggest challenges in this whole enterprise. Not only how big and ever changing the organization structure here is, forget that and look at the FAR, I haven't a clue about everything in it. Sent me to Program Management training, ok, but I'm not a bomb-buyer or weapons kind of guy, but I'm buying commodities, and that whole training string is really dealing with the weapons side of the house, they really don't have anything that's a good fit for program manager development at least that I've seen so far. In some of the training I've asked to get into I've gathered some insight into FAR requirements and PM requirements and that kind of thing, and I just think they need another track, particularly if the federal govt is taking this on in any sort of meaningful way, they ought to have one way they look at it for enterprise sourcing across the enterprise. But the training itself that they do have is worthwhile, and there is other training specific to needs like Microsoft Exchange if you're using it.

There was a course that you took when you first started that was a strategic sourcing course that Deloit taught, so that was sort of an introduction type thing. I think there were a couple DAU type courses that we did online around procurement and pretty high-level type knowledge. Most of what I know today has been mostly just on the job type training, more the experience and technical details learned each day. We learned a lot from talking with the major suppliers in the industry which was really helpful, and then AFCEC had an elevator maintenance SME who's in charge of that for the Air Force and he was very knowledgeable. And then supplement that with some of the online literature and we buy some market research that we had access to.

We have a lot of training. we have strategic sourcing training and that'll probably be the biggest and then all the little ones. We got forefend it all at one time and realized now that just in time training so that each person if they need something we have a training module. There's plenty of training, timing is just where it's not yet, but I think they've come up with a good plan. I've done contracting here three years, strategic sourcing is way different than traditional contracting.

They do have the about a day and a half training with Deloit. We all pretty well go through that, but other than that, it's basically a high level look at strategic sourcing and when people come here they usually don't know what it is so it's 'here's the seven step process' and they give a couple of real basic examples of what it is and it's just kind of to give you an overview of what it is. My understanding of the process and the wheel is that it came from industry, but I think there're some complications with that; govt usually has some problems when they try to mimic what industry does because they can't in a lot of cases. The training is good from the standpoint in that if it happened in your first couple of weeks here. In a lot of cases it happens six months to a year after you're here and by that point I've already been working it during that time so it's missed the boat on the effectiveness of it. I think probably the biggest challenge is defining what strategic sourcing is; you can probably give somebody a really basic idea, and when you think of industry you think 'hey we buy a lot of this stuff, and we buy it from a lot of people, so lets buy it from one person' and that is strategic sourcing but what we try to do here goes way more in depth from what that is.

They do a pretty good job here of doing just-in-time training, and if you're coming into a certain part of the acquisition process you go learn about spend analysis or source selection, so we definitely do that, and personally I've received enough that was applicable to here, so they do a pretty good job of appropriate training.

Oh yeah, I went through three weeks of classroom, it was awful, but now they've slimmed it down with Deloit teaching it for strategic sourcing.

I got the 7-step process training, which was a 3 week program, and I get just in time training for contracting. But with regards to Civil Engineering you have to bring it or you don't have it. So what I do is I spend most of my time just kind of tutoring the team on Civil Engineering stuff.

Yes, it's ok, and I say that as a caveat due to who they have doing the training, who's a contractor who didn't come up with this in the first place, and they use examples that are not really relevant. We could do it internally I think a lot better instead of getting a contractor hired to do the training, we need to do it within the government using our examples instead of them throwing stuff out there isn't really relevant.

Yes, through our contractors Deloit they have a workshop that they send us through for strategic sourcing. Originally it was a three-week thing, but now it's been cut down to a couple days, and then we have the binders they give us after that for use as training materials. It kind of sets the foundation but it's more about when you use it and start doing it that you learn the most. I came in Jan of 11 and sat in the workshop of May or June after all the other required training I had to sit through.

Do you feel the CECC has the appropriate mix of specialties (or AFSCs) internally for the performance of its responsibilities? If not, what areas or specialties do you think should or should not be included?

Generally speaking yes. Are there times when I wish we had more of the subject matter expertise here? Yeah, but it's not like we don't have access to those resources and not. You know I have engineering resources assigned to my team and they have pretty good general skillsets in terms of operations. Generally I'd say we have a pretty good mix of people assigned to the team. From a CECC standpoint I think getting some engineers on the team has been a big help, both in terms of the expertise that they had as well as the contacts and the people they know at AFCEC.

Should PM's be GS-0801? For us to have PM's that aren't PE's, and we require PE's as PM's...at the enterprise level we don't require them but at the base CE level we do? That's a question for management, they decided not to, they wanted to use this weapons acquisitions construct, and I think it probably works for the commodities groups, but for real property... should AFIT set up a schoolhouse for 5 or 6 PMs to get a background for engineering, and I'm thinking of what it takes to get a background in Civil Engineering and it takes years. For example I think for the HVAC spirals they should have a Mechanical Engineer, and they really should have somebody from a base-level mechanical shop. My point is this, if you're working at the base level, an intermediate supervisor has 10/15/20 years and he's making most of the decisions, and if you're a new start you're just grindings the numbers and details, and that's an important role. The PMs here, that's what they wanted, just someone to handle schedules and programming at a higher level. When you look at the folks that they've hired here and their backgrounds, I think that some of their fields are valuable at some level, but maybe you can get the program management with a little bit of background in the specific field

No, again when the govt sets things up they do things weirdly and I think a lot of it from the civilian side of it is 'what slots do they have' not like industry where they go 'we need to hire this many of this type' and then goes to do it, the govt has specific slots, that needs to be specifically coded, and that creates problems. In the CECC we probably have way more contracting people than we really need because we just don't have a lot of contracting right now. We could've used more PMs, probably more engineers, especially dealing with civil engineering. I think our engineers aren't necessarily the experts in

what we're looking at (generic engineers). And experience is also something here, too, they really filled the place up with trainees and airmen, and not a lot of operational contracting experience, so it makes things difficult.

We are getting there. Originally not so much, but we have added engineers to the flight, we could beef up on the CO in the flight but we have some folks being groomed for those positions in the flight, so we're getting to that point.

No. We have a major imbalance of expertise in Contracting and too few in Engineering disciplines. This has caused Teams to over rely on already-taxed AFCEC SMEs and field specialists whom supporting CECC is often an extra workload burden.

We're contracting heavy right now, which is fine, which is good especially during source selection phase of the process, but we've lacked engineers because of the hiring process but now that we've got them on board that's helped a ton, so I'd say we're getting closer to achieving the right mix

I think so, we have maybe too many contracting people, but they want everything to be a contract so that's why. But other than that, it was a slow start, we've got more engineers, we had a short supply of engineers, we had one engineer overlooking all the projects and he was not necessarily skilled in every single area, so now we have enough engineers that they can take their own specialty areas and work with that. So that was probably the biggest change, and the most useful because our engineer was great but you can only do so much and so he needed help and that was a positive so I think we're ok. We work with AFCEC now and they seem to get along (with the engineers) and some of the communication issues have broken down a little bit, in a good way, in that there's no more walls since some of these engineers had an 'in' with the AFCEC people so they've smoothed over some conflict.

Yeah, if you mean like contractors, and in the world we're in we have contracting types, but it's really experienced contracting professionals but we also have a lot of students who are kind of learning their trade, there must be three or four folks. Don't get me wrong they're some really good folks but they're still learning the trade while we have experienced multi-year contractors. When we started we only had one engineer, but we've gotten more and I'm not so sure we need dedicated CE's, it seems to me if you focused on an area you want to get into, you really want to have the CE types who know that world, who've worked in that world, and that might mean you have a team based out of a certain base who has significant years of experience in buying. If you've had bases who've gone through one area, in an ideal world CE would tell me "hey, we're going to add CE so-and-so from base A who's gone through this multiple times over his career," and now we have devoted effort folks who know the ins and outs and know the entire process. While we have folks on board who know their way around it, it's not like they've been involved with it or bought it over their careers. And they're learning it as much as I am, so that makes it a bit more of a challenge, but it is what it is.

No, not at all. We don't have enough engineers, we've got way too many contract specialists. I think when they worked on the organizational structure they felt that they could get a lot of contracting people because they're high in demand. For engineers, we have SMEs. I need engineering support, somebody who can technically understand the engineering part.

Yes, before when we didn't have any engineers that was a huge downfall, but now that we do I think it's incredibly beneficial. We have four of us and I think it's ok. At times we can be very busy but manpower is short everywhere.

Do you feel (or find) that the CE career field as a whole knows about your organization and what you do?

They're getting there. The senior folks clearly all do, the SMEs do by all accounts, there's been a number of communications, and interactions and we have points of contact down there. But once you get out to the base level, not so much. I mean depending upon what level you get to, I don't know if the CE screwdriver carrying-types know, but I wouldn't expect them to. And I haven't had enough experience in my initiatives to say where we were reaching out to user communities, but I don't deem that to be a huge impediment, I see that we need to reach out once we've identified something from the top down to provide them with whatever understanding we need to. Like for PPE, early on we reached out to them and they've had some experience on a regional basis doing some of this stuff and they knew some of the buzzwords and the process, so that was kind of an easier sell to them to sell the merits of the thing. In contrast, retrocommissioning is a much more targeted funding pool as it stands, it may be easier to reign in the user community because it all supposedly flows through one organization with the funding to support it.

I guess so, my initial reaction was no, but the more I talk to people I think they do know about it but we haven't done anything that's put a contractual vehicle in their hands to operate off of, so I think they know about us and they've heard this is going to be great but now they're saying 'when're we gonna get it?' and that may be a factor of who in the CE career field I talk to. And I'd argue that most of the contracting people I talk to don't know either, and we're writing the contracts and they're the ones that're supposed to be using them and they don't know about us, so there's definitely some improvement that needs to be looked at there.

They are coming to know more about us, as we do more projects and get our name out there, that's what our change managements communications groups are helping to make us known. We're trying to do everything as alike as we can so there's an expectation of

'when I'm working with ESG, I can expect that I'm gonna get this type of work from that group' so these communications are a viable part of us getting the word out.

I think they're probably learning more now as we've been here longer, but honestly we just had a conference call a couple weeks ago with a base and they're like 'who're you guys?'

No, and I say that because I made some phone calls when I first started here to some counterparts and they just asked 'you're where?' 'it's not on the organizational structure,' and there's some miscommunication even within CE and even within AFCEC not knowing what the difference between what the 772nd, who does contracts solely for AFCEC and not strategic sourcing, and what we do in the 771st, and so yes there's a huge disconnect even with CE, even the guys that work strategic sourcing don't know.

I've had some meetings that I've set up to get feedback from base-level CE and people working down at Base-level lately, and I would say it's about 50/50 where when I set the call up and you get them on the phone and their first thing is 'who are you' and 'what're you guys trying to do.' I think at a higher level the resources know we're looking to do things like this, but in terms of specifically of what the group is doing and what we're delivering I think the answer is just at a very high level. I think at the end of the day it's all about delivering programs and having a reason for them to engage with and understand what you can deliver as much as anything.

No, no way. The word isn't getting out. We need a marketing plan, we need a marketing plan to get out there and go pound the pavement, go to every base. When we were out at Peterson, we were doing a base survey and we walked in and said who we were and the first thing that came out of the Col's mouth was 'oh you're the group that took the 59 contracting billets from us,' so that's the kind of reputation we need to correct.

Yes, it's in the P-plans and the PAD, if you look over the past couple of times Gen. Byers have talked to the Civil Engineers there's always a chart there for strategic sourcing. Now as far as actually delivering products from our group, the only products we've delivered is the taxi-way lighting thing and the elevator maintenance policy. So if we came up with new contracts fielded, that's when they would. You know, at the base level CE level, they would still have to go through CONS and they would know this is a much higher level-enterprise...but I don't think it would really matter that much to the CE people. They'd just know in order to get this they'd need to send in the task order.

I don't think so, we're starting to get the word out, and there's a breakdown somewhere; we would send information out and I would send it out on the first of the month, we'd send it to the MAJCOMs who send it out to their base-level people and it would get stuck at the MAJCOM and if there was something we needed back I could see in the tracking info that it hadn't been sent out until the 22nd so you know they'd sit on it for 3 weeks before sending it out, and is that normal? I don't know but they tend to hold back

information, so I don't think the information flows I think it hits a wall. **Good level of support?** No, but it's getting better, you can only do so much with what they're giving and we understand they're in a tough spot too and they're all reorganizing so everytime we think we get it smoothed out something changes, but I think they're starting to get it that we're beneficial and the money isn't going to be there, the budget is going to get cut, and they still have to maintain the bases and we are the avenue to get that done. So the more they play along the more we can get done.

At AF/A7C and MAJCOM A7Os, there is a familiarity with ESG and its general role to contribute efficiencies through some kind of strategic procurement methods. There is very little exposure at the base level to ESG, CECC, and strategic sourcing. Despite mention of strategic sourcing as an enabler to CE strategy, there is little in the way of publications, communications, or training to reinforce who we are, what we do, and why it's important to CE.

Previous commodity council research has shown that participation and commitment from the supported career field impacted how successful commodity sourcing strategies were. What measures (if any) are in place to create/maintain cooperative relationships with the CE career field?

We're trying, we have the communications people. **Are they new?** no they're not new, they're just refocused/repurposed I think, they're starting with CE where before they were generally doing the whole ESG, but we seem to have the most hurdles with our stakeholders so they're going to come and help us push the message. They're going to come up with newsletters and start pushing out info through Col Knipper, at that level, to flow down and not from us which is helpful.

Formally, there are designated MAJCOM A7O representatives, and a MOA between AFCEA (AFCESA?), AFCEE, and CECC. Other than those, there are very little established relationships between CECC and the career field. Because the organization is in its infancy, we haven't yet contributed a great deal to the CE community, and there isn't yet a formal push from CE to build these relationships with CECC. The health of the relationship is mostly dependent up on each individual commodity team. We need to improve at the ESG, 771 ESS, and CECC level in relationship building.

We do, and we work incredibly well and I use fire PPE as an example but you can't find a more supportive customer than them, and it's different between different commodities but c'mon within any CE you'll have someone sitting at his desk thinking 'ok this is the way I've always done it and I'm not going to change this is the way I know it and you're not going to tell me any different.' The thing is that they need to because we've lost our money and we need to figure out a better way to do our processes and how we do businesses and they're not.

There's been a strained relationship, and I think you need to understand the politics. The politics is they have these hundreds of millions in savings, and ten billions, and then you go down the stair case and there really isn't that much addressable, and so who's fault is that? So there's kind of a strained relationship in that the requirements come from the field and if you want a data call and as soon as the people appear to think they want something then they expect that it's there and the information is not available. I could give you example after example, by the nature of the environment it's always going to be strained. I think at the high levels there needs to be an expectations management, but that needs to happen way above my paygrade.

No not really.

When I first showed up, the relationship wasn't great between CE and us, and I think we kind of got paired up against their will, and what was told to them about what was going to happen didn't happen. I don't know all the background, but it's gotten better and I think it's gotten better because we have somebody here now, a head engineer, that has a relationship with them and can kind of be a liason between the two groups. So I think communication has gotten better, I don't know how much good the CMP and MOA was doing for everybody, and I've looked at it and what is supposed to be happening doesn't really happen. And there've been some personnel changes down there that have kind of helped, and I think they're slowly getting a better acquisitions understanding but I think strategic sourcing is very time consuming. So much like most program offices they just want to get something on contract and they don't really understand yet that it's not really that easy and this is a time consuming process. So I think we just try to keep the lines of communication open and try to be honest with each other, and it's not perfect but it's getting better.

We have these guys down the hallway, they're responsible to interact with the AFCEC SME crowd to be sure that the word is out and I think they've done a pretty credible job. It's a little different in the corporate world where if they tell you that you will do something, whereas here it's a tougher sell due to the ownership of money.

No, we don't have any customers that come forward, no stakeholders, it's a mess. We're doing all this to get a contract awarded and then nobody buys off of it, it's just not working.

The only things I'm aware of are the interactions that are part of the ongoing activities, nothing outside of normal workplace activities, though.

What factors have most contributed to your successful sourcing efforts?

What barriers, impediments, or challenges (if any) have you encountered in your part of the commodity sourcing process (i.e. policies, culture, skills, organizational structure, information, disincentives)? How were they resolved?

What do you think are the most important factors that facilitate successful commodity sourcing efforts?

What do you think are the most important factors that could potentially hinder commodity sourcing efforts or create additional challenges in the process?

As mentioned in the previous question, contributions from field CE personnel in general is a significant factor. Access to the field makes a huge difference in identifying the issues and suitable solutions to address those issues. Familiarity with the working environment of CE gained over time has helped to improve our efforts. An initial impediment was a restriction on open communication with MAJCOM/Field CE. This hampered our ability to both obtain and provide information that would improve the effort. This impediment was eventually overcome by gaining credibility with AFCEC and by formally laying down ground rules via a MOA. The imbalance of Contracting team members contributes to the potential for contracting solutions being out front, and may influence or cloud our ability to identify other viable solutions. The pressure to cater to small business interests by Contracting severely limited the solution set, and significantly influenced the level of efficiencies that CECC was able to bring to the table for the CE community. Perception and trust of CECC – recommendations do not appear to carry much weight. Not invented here, recommendations may not be welcomed. Experience of the project Team is a major factor in the viability of the solution and length of time it takes to get to that solution. Where you lack a group of interested and involved SMEs, there is little remedy for this except the passage of time. Getting communications out – unfamiliar with vehicles? Reluctance to complete data calls on part of field – lack of awareness, perception of importance by supervisors/leaders. Understanding of who ESG/CECC is. Availability of SMEs. Better access to CE community – AFIT classes, data systems, invitations to meetings/conferences, seat at table (even just as observer) to planning processes, copied on communications, etc.

What hinders are when you just don't have everyone as a willing participant, but you know once you get them on board you can get to work. The other thing is just working through the whole contracting process, just trying to attempt to expedite. And people having their own preconceived notions of how it's supposed to run and you come up with ways to make it work. And of course you always have to deal with small business but there's no way around that.

So I haven't been involved with anything that's gone through to completion, but we have had some small successes. **What factors influenced that?** One was a data-call we did and sent out to the field where we said roughly 'help us understand what we're looking

at? What does the roofing picture look like for the next five to eight years' and so we spent a lot of time trying to understand what pieces of information we needed. That went through AFCEC and so they sent it out, it was organized by MAJCOM, and then when we got it back we broke it into proposed regions we've laid out so we had a good idea of the amount of work if funding were no problem, all the projects that would be executed in that region, and that gave us a good picture of what's out there that needs to be repaired/replaced or that will be in the next five to eight years. The factor there was the folks at the base level who took the time to dig in and find the information and put it into a spreadsheet for us and that was really helpful and helped solidify a lot of our commodity sourcing strategy and the briefing we ended up giving to general xxx and general xxx. **Any barriers?** The policies are there, I think, and a huge one for us is this requirement that when something's consolidated. Consolidation and bundling are two big topics, and they mean very specific things: consolidation takes something that was previously solicited on multiple solicitations and you combine the requirement to solicit on one solicitation, and bundling is doing the same thing, but that consolidation would have a negative impact on small businesses, and so those're two huge things we fight and that's what I spent over a month on trying to get that approved because by definition strategic sourcing is going from lots of suppliers to fewer suppliers and the small business world does not like that so that's a huge challenge. What else, culture? Culture is an impediment but it changes if the right people at the top drive the change, and it just takes the time and for ESG I think it's gotten better. We also have a lot of inexperienced folks at all levels who have tons of experience in industry and know strategic sourcing from that perspective but don't know the government nuances, so we might have a contracting officer who might know how to be a contracting officer, but not for civil engineers so we have people with credentials, but it's not relevant experience and that's where we spend a lot of time questioning our decisions and saying 'well I don't know anything about roofing.'

I don't know, we're being forced down a contract avenue and that might not be the best solution, so I think going forward with the new way they're getting the projects maybe it'll be helpful, but right now the contracting method may not be the best solution. Stakeholder involvement is also important, just letting us know what's important to them or what they want from us. If we would've had a little bit of conversation in the beginning, how we're going to get along or this is what we really really need it would've been a lot easier. We had to create our own requirements, and we had no help, so it was a struggle and I don't think everybody is having as much struggle, we have a couple new ones and their stakeholders are so involved and they're very successful and just flying right through and they've got all kinds of support and they know what they're doing and they know where they're going and they know how it's going to be and it's positive we had to kind of back into a lot of stuff. The process the way it's designed I think works well, but I think when you look at services like we are it's not easy, and some of it has been standardized and there's not a whole lot we can do with it, but I think the process is a good process it's a necessary process. We have some social issues, like small business, that puts a hamper on everything we do. Even with roofing we had a lot of 8A contracts,

and if we had a couple big contracts out there that could manage the whole thing we'd be good to go, but we can't because we have to maintain all the bases so we're almost back to where we started so social policy is huge with the DoD and there's no way around it, so I think we're just going to have a struggle on our hands.

Clear ownership, who the target audience who has the buying power, engaged management from above and involvement. It's important to know who the players are, and it's easy to find out who the SMEs are but what I did find out is that the SMEs orientation candidly is not oriented to strategic sourcing. SMEs do SME stuff, technical work, air force policy, but doesn't really focus on the optimization of spend, and they don't own the money. So clear objectives, a solid information set on spend/contracts/policies/requirements. Barriers or impediments? Well I think organization is a big thing, all these have some elements of that. Policies? You could spend days/weeks looking into air force instructions, OMB, DoD, and then you have to look at what's the Army doing, what's the navy doing, and then you start rolling that all together and you can spend your lifetime looking into this. The challenges oftentimes, there's so much nuance and difference in the way and manner that some of these requirements were sourced or defined that made it hugely challenging to take it all in. It's also much more challenging in the services arena to define your requirements

We had energy funds that have since been utilized, and a push from AFCESA to utilize those funds. That's what allowed us to buy awards on our contract. We did thorough market intelligence research. We went down and met with the FAA since all our standards had to be approved by the FAA. We really went out and did our homework, and that's really the foundation to strategic sourcing. We've also talked with AFCESA/AFCEC SME and received information from there, although they were kind of hard to get a hold of, but they helped us. | Enough time is a huge factor, we're rushed. The PM sets the deadline, and then our boss tries to negotiate because that takes too long and we have to back it up, so then we wind up backing up the date and run behind, then we get in trouble. And then everytime you turn around another hard-ball is thrown at you so it's just very difficult to schedule. **Any barriers?** Well, AFCESA wouldn't give us the list of which bases we were going to walk down to allocate the taxiway contract to for planning, and I don't know why that happened because we wanted to work with the contractors to give them a heads up that it was two months away from end of year and if we get a windfall of funds can you execute more than the 2000 light fixtures a month so we could meet the demand, but we had no idea what was coming. Management making a decision, they can't ever make a decision on what to source, how to source it, at all levels

It's really just making sure that we stick to and set a realistic schedule. Our biggest thing is accounting for the folks that do get deployed or TDYs and that plays a major roll. For the schedule we start with the wheel and each step of the process says we're going to do x y and z and x is going to take this time and y is going to take this time and we sort of build our schedule off of that, and depending on how big or small the project is that can obviously determine the time for how long each step is going to take. **Any barriers** no

not really, just sometimes in-house communication breaks down in-house just trying to communicate with the folks at Tyndall, it's really just because they've been moving and changing their offices, it's just been a little bit hard making sure we all stay in constant communication. I think just communication is the biggest part of it, getting everyone on board is the thing. I worked on a project that didn't turn out quite as necessarily as we hoped just because of issues we kept running into issues with folks down at Tyndall had one idea and we had some other ideas and it's just trying to make sure everyone's on the same page from the start makes everyone's job much easier. It's just your in-house communication making sure your customers are on-board and understanding of any new processes you're going to be putting down.

Probably the two we have now, one of those has been through CSS and one hasn't, so they might not have had many successes, but there's probably more barriers than actual successes. Barriers would be simply, somebody just hands you a topic and says 'hey go find out about this' and you're not really given a lot of finite detail about what you're doing. Here's a pile of stuff, go figure out what it is, that's a big deal because we're sitting here trying to figure out what the customer wants, and we don't always get a lot of help from them on that because they don't necessarily know what they want either, especially from a strategic sourcing standpoint, so that's kind of a barrier. They just know, 'somebody tells us we spend too much money on this, go figure out how we can spend less.' **Any factors for success?** I would think probably a fully engaged customer, I think that's one of the problems that they don't have as much on the other side. We have a program here, our PPE one, and that one seems to be moving along pretty nicely, and it's IMO, and there're other factors, but one of the big factors is that their customer is fully engaged, wants it, wants it bad, so they're doing everything they can to help them. And that really helps a lot when you have a customer that's fully engaged, that "champion" as they say, and I don't think a lot of these have that. Yeah, I think it would be helpful to have a little better idea of what you want to do, and that really includes everything, not just 'hey we want to buy hvac equipment.' And I think some people do have some idea on strategic sourcing and you'll see them throw a lot of things like 'standardization' around, and 'hey if we can standardize on one manufacturer' and we said that's probably not a really good idea, but what if we could standardize on the equipment we're buying, and we got some pushback on that. So I think an educated customer helps, and I don't think a lot of people have education on strategic sourcing anyways so it's kind of hard to do. I think the right mix of people, too. A lot of it is growing pains right now, is a lot of the barriers that a lot of organizations deal with. **Are there SMEs?** I think they do have some SMEs, and there's supposed to be one assigned to every project at AFCEC, but unfortunately it's, and it probably shouldn't be, but it's not necessarily their number one priority, I mean they have other work to do. And I think sometimes, because of lack of buy-in, 'I've got all this other work I need to do.' I think every project has a contact that is a SME, but how engaged that SME is, is variable. Again, the PPE group, fire PPE, they have a very engaged SME and that's why they're moving probably better than the rest of us.

I think getting the customers engagement, so everytime I start working one of these things it comes down to 'well you need to define that requirement more specifically' and that's true, so I think having the customer engaged and interested. That to me is the difference between, these things kind of take a lot of time due to the nature of the thing, but I think reducing the cycle time would help on a lot of these things, its having that customer engagement because it would really speed up some of the requirements gathering and some of that stuff that is time consuming. You might talk to them, then you need to go do two or three other things before you go back to them and by then it's later, and I think sometimes you talk to them and try to get some information out of them then you try to figure out what to do with that info from a programs and a strategy standpoint, and by the time you get back to them they assume 'hey you're going out to write a contract, like tomorrow' and it just doesn't end up working that way. But I think the fact that we do have that engagement does contribute to the people and the team to getting to the point where we can execute something much quicker. Other than that, I hear talk about people coming and going on the team, and I agree that that sometimes makes it seem harder, but I think as long as you have some continuity from a project management/manager level I don't think it kills us that much. **Any barriers?** To me the things that complicate and make it slow and cause you to run into brick walls at times, they're just things that are the nature of sourcing stuff for the government, nothing specific to the commodity council here, just sourcing in general. I think you could probably speed things up if when you got an opportunity it was a little bit more refined in terms of the spend data and what you have. So you'll get the data for a project and start sorting through that and then after four months of looking through the information you have you figure out the part of that you can really effect out of a 50M dollar opportunity it's really a 30M dollar opportunity. And I don't think it's unique to our council or the air force in general, that the spend data and purchase information you have takes so much massaging to make any sense of it.

Very clear scope, very clear specifications and requirements, in order to get good pricing and good quality products. However, each base has different local requirements, state laws, the ways they operate, that make enterprise-sourcing of real property more challenging. I work closely with the AFCEC SMEs to get specific information, I'm not an xxx, so I'm talking with xxx down at AFCEC and it's not xxx's only thing going on so that can slow things down. Also, how do you write something for real property, you can write an overall technical spec, but the actual management and how many submittals, there's going to be some ancillary construction, and it makes it very challenging. **Any barriers?** I think enterprise-sourcing of services with small business is a challenge, I'm not sure that it can't be done, they're really a challenge and they're working that and coming up some ideas on how to do that. And I think it takes a lot of time and getting the requirements of what it makes sense to do at an enterprise level is a challenge.

Have you looked at other commodity councils to identify issues they have been having? If so, what measure have they taken to mitigate their challenges, and have you implemented anything similar?

We do follow the furnishings, they're a step ahead of us with a lot of their issues, so they've just put out a solicitation and had a protest and sort of follow what they did. And they've had good stakeholder feedback so we're looking at how they've dealt with their stakeholders, slides that they've used and information they pushed out so we're really pulling a lot from them. And we're trying to standardize ourselves as well because if we're trying to standardize the air force we should be standardized ourselves so those go hand in hand and they do a good job and we try to follow and we all do, we talk with people there. **Anything specific that they've done?** Not specifically, but just good stakeholder feedback, and they're doing commodities, we're doing services where we're talking bodies and people with boots on the ground, and there's wage-rates per counties and we're balancing a whole different ball-game they may have it easier. We try to communicate, that's one thing, we all try to communicate.

Yes, commodities, and or force protection, for example, some of the limitations that they have. And what's fortunate is that we have every three weeks a meeting so you listen to all their problems that they're dealing with and how they're dealing with it to use that to relate to yours so you know what you're not going to want to do. For example, coming up with spend for fire PPE, it doesn't have a separate PE, it's hard to track and it's all lumped in together. So in order to do that we did a data call to all the bases to tell us how much they've spent, and in proximity, structural, hazamat gear, and they've outlined how much they spent on inspections, etc. And that data call, you probably have someone fat fingering information but you're fairly confident that it's 80% accurate, which is good, so that gives us an idea of how much they spent. So we used that to let everybody else know. For our commodities, we're looking at roofing and we're just kind of following them as an example to see what to do. **Any meetings?** We've also gone to different conferences, we try to talk to different people, I mean we try but no we don't have a specific solution or example yet. But what we're trying to do with our communications plan, which is really important, and I was working with them on things we should do and I think that ultimately is going to help us and maybe help us generate come up with solutions. ...I was also going to sign up for some different classes (AFIT schoolhouse), just the web-based ones, just to see what's going on for my own education, but then at the same time to try and see how they're doing and if there're some potentials that we could insert some strategic sourcing into. I've also brought it up with Col Schuld talking to him about trying to get into AFIT and coming up with 'hey here's strategic sourcing, here're the different avenues' and I was looking at the class list to see what can we try to get into. And I've brought this all up and it's in our communication plan. **Kind of looking at the same things I was.** Yup, it's all already in there. But it's in there as a topic as part of our plan, but we have a lot of things to tackle, it's huge. Plus we're also talking about Gen Byers he's doing the whole transformation, what's going on with the PAD and the P-

Plan going out to all the BCEs and talking to them, I think he has a VTC with ACC and PACAF this next week, trying to talk to them with the transformation, and part of the PAD also has doing strategic sourcing so we're trying to see what we can possibly insert in there if anything.

It's prob one of the issues we do have here, and I don't really go to them, but they do have SSRs every three weeks so that is one way for mostly the PMs and contractors. And it's every program in the 771st and the PMs will just give an update. So sometimes they'll be some things discussed there, but there's not a lot of cross-talk yet, and I think some of that is because we're doing things that are so different because we just haven't gotten to the finish line on some things yet. But yeah, we don't do a lot of cross-talk yet, I mean we even have the medical folks in the same room and we're not always talking amongst ourselves.

Not really.

Yeah, as far as ESG as a whole we work with each other for lessons learned so anything they might have already done we'll look at it and we'll use it. We'll use any research that they might already have. **Anything yet?** Nothing really related to any of the efforts I've already been on and I do know they have lessons learned especially when it comes down to things like some protests they've had come through, so things that as I move further along we'll really look at.

I know the designers that support the furnishings council, but they're not our stakeholders in CE. But for us to reach out and find our CE equivalents, they're too busy, they don't have enough time, they don't care, they're not going to have any funds to do any of this stuff, so they're really just not interested.

We've examined successful practices of the Furnishings Commodity Council, whom has enjoyed a high level of participation from their SMEs. They asked the Deputy CE to designate SMEs formally, and outlined the roles, responsibilities, and expectations from the beginning. Our council has not implemented anything similar, however we recognize that our operating environment is different and may require somewhat different approaches.

We've definitely looked to the other councils and we try to share as much internally amongst the commodity councils as we can to say how did you have success doing this, we share templates and the furnishing guys have sent their consolidation memo (to justify consolidation) which we used and took pieces from that. They had some issues with their customer, but from our perspective outside looking in we think 'their customers are fully on board and great and just give them the exact requirements so they can buy it and it's not difficult' but they do have stakeholders who are eager and like the idea of this and are willing to communicate and participate moreso than I think we've seen. **Did they do**

anything different? I think they had a little more drive from within ESG like when their stakeholders came here they went out to dinner together and whatever.

Yeah we talk to the other commodity councils.

What changes (if any) would you implement to the commodity sourcing process to improve it?

Tons of changes have taken place, and it's unbelievable how much has happened since I've been here. Huge change in terms of resources here, leadership changes, deployments, and it's kind of a neverending balancing act or a sea of change in terms of who's on. I've worked on 5 or 6 different projects since I've been here but none from start to back, and I've had 2 or 3 projects already where I haven't got to start from the get-go to kind of see how that sourcing wheel works in the Air Force way, and all these individual contracts have to do this, risk review for that, sign off by legal for this, small-business sign off for that, and your head is just reeling and again that kind of gets back to the sourcing process itself, it may be a requirement for everything, or it may not. The training we had speaks to we'll require it all and only if you've had experience, particularly if you're in the AF and know the FAR. So the sourcing process itself may not apply to every single commodity, and I've heard folks tell me that, but to try to ferret that out when you're in the midst of the fray. There's some uncertainty in my mind, too, because there's already so many established buying venues like the GSA and like the P-Card, and DLA, and multiples of this and depending on who you talk to and the day you talk to they may tell you, we don't want to pay that uplift and we're not even going to consider it so don't even spend any time on it, and I'm thinking well, why would we not think that through.

I believe that the process started backwards. In our group they hired something like 15-20 contracting people and 5 PM's and one engineer. I would've said, hired engineers first, come up with requirements packages, with some PMs and contractors...

Institute several Go/No-go checkpoints during the process to avoid spending unnecessary time on a commodity that has little likelihood for success.

We really need customers and stakeholders to support us. It's really been frustrating coming in into this mess ad hoc

In the case of the CECC, like I said I think it's getting better, but probably more of a champion from our customer side. I think we have it to some extent now, but it doesn't really feel like it filters all the way down to the people we're dealing with. I mean there's upper leadership but it's not filtering down, and that would end up flowing it down to the

bases. I think once we get more successes, I think all it's going to take is a couple of successes for some people to buy into it

Appendix C: Sample Codes-to-Quotations Summary

Code: “Career Field Knowledge: Yes”

Yes, it’s in the P-plans and the PAD, if you look over the past couple of times Gen. Byers have talked to the Civil Engineers there’s always a chart there for strategic sourcing.

At AF/A7C and MAJCOM A7Os, there is a familiarity with the ESG and its general role to contribute efficiencies through some kind of strategic procurement methods.

Code: “Career Field Knowledge: No”

I think they’re probably learning more now as we’ve been here longer, but honestly we just had a conference call a couple weeks ago with a base and they’re like ‘who’re you guys?’

There is very little exposure at the base level to ESG, CECC, and strategic sourcing.

Code: “Example: Positive Stakeholder Participation/Support”

Going forward, they have a committee now and champions so it’s a more formalized really thoughtful approach which is necessary, it’s getting there, we’re a learning organization.

Again, the PPE group, fire PPE, they have a very engaged SME and that’s why they’re moving probably better than the rest of us.

Code: “Example: Lack of Stakeholder Participation/Support”

I don’t know, but they tend to hold back information, so I don’t think the information flows, I think it hits a wall.

We had to create our own requirements, and we had no help so it was a struggle and I don’t think everybody is having as much struggle.

Appendix D: Code Families

Code Family	Codes	Quotations
Best Practices Between Councils	2	22
Career Field Knowledge	7	24
Commitment and Cooperation	8	32
Efforts for Improvement	13	32
Examples	19	48
Factors: Problem	18	43
Factors: Success	11	42
Interactions with CE	19	100
Mix of Specialties	15	46
Training	11	34
Trust: Ability	41	111
Trust: Benevolence	15	53
Trust: Communications	6	23
Trust: Integrity	0	0

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14. ABSTRACT The Air Force is pursuing strategic sourcing as a strategy for reducing costs of goods and services to help meet budget reductions while still performing its mission. These commodities are sourced through a number of commodity councils, each of which whom interact with their stakeholders throughout the sourcing process for that specific commodity. This research identifies factors that influence the success or failure of the sourcing process from the perspective of the Civil Engineering Commodity Council (CECC) and attempts to organize these factors within a framework built around trust and its effect on commitment and cooperation. These factors were identified through in-depth interviews performed with personnel on the CECC with experience in the sourcing process, after which responses were analyzed with Atlas.ti to identify themes and trends. Stakeholder support and participation was stated to be one of the largest factors impacting successful sourcing efforts, and perceptions of other factors such as appropriate training, appropriate mix of specialties on the team, experience, marketing, and successes were proposed as important to building trust in the CECC. Addressing these factors would then improve the perceptions of ability and benevolence of the CECC, resulting in improved trust, commitment, and cooperation from the career field.					
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