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An Assessment of Collaborative Capacity of Three Organizations within Defense Acquisition

16 December 2008

by

Jeremiah N. Kirschman, Capt., USAF, and

Michele M. LaPorte, LCDR, USN

Advisors: Dr. Susan P. Hocevar, Associate Professor,

Erik Jansen, Senior Lecturer, and

Dr. Rene G. Rendon, Associate Professor

Graduate School of Business & Public Policy

Naval Postgraduate School

Prepared for: Naval Postgraduate School, Monterey, California 93943

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Abstract

The leadership within the defense acquisition arena recognizes that inter-organizational collaboration is pivotal to equipping the Warfighter, on schedule and on budget, with capabilities for combating global threats to national security. In order to understand the enablers and the barriers to collaboration within the defense acquisition environment, this research project presents survey results from three participating defense acquisition organizations. An assessment of these results provides the participating offices with insights into their operations as they interact with other organizations in the acquisition process to achieve mutual goals. Finally, this research project strives to contribute to the development of a tool that can be used by other defense acquisition entities to identify their collaborative strengths and weaknesses.

Keywords: Collaboration, Collaborative Capacity, Inter-organizational Collaboration, Collaborative Capacity Survey, Defense Acquisition

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About the Authors

Capt. Jeremiah Kirschman, United States Air Force, is currently a student in the Master of Business Administration program (with an emphasis on Strategic Purchasing) at the Naval Postgraduate School, Monterey, California. Captain Kirschman completed his undergraduate studies at the United States Air Force Academy in Colorado Springs, Colorado. Prior to his current assignment, Captain Kirschman served as the Construction Flight Commander for the 27th Contracting Squadron at Cannon Air Force Base, New Mexico. His next assignment is to the United States Air Force Academy, where Captain Kirschman will be an instructor in the Management Department.

LCDR Michele LaPorte, United States Navy, is currently a student in the Master of Business Administration program (with an emphasis on Acquisition and Contract Management) at Naval Postgraduate School, Monterey, California. LCDR LaPorte completed her undergraduate studies at Chapman University's campus located in Oak Harbor, Washington. Prior to her current assignment, LCDR LaPorte served as a Contracting Officer at Fleet Industrial Supply Center Sigonella, Detachment Naples, Italy. Her next assignment is to USS PELELIU (LHA-5), San Diego, California.

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Table of Contents

List of Acronyms and Abbreviations

ACAT	Acquisition Category
CAO	Contract Administration Office
DAPA	Defense Acquisition Performance Assessment
DAWIA	Defense Acquisition Workforce Improvement Act
DCMA	Defense Contract Management Agency
DHS	Department of Homeland Security
DNI	Director of National Intelligence
DoD	Department of Defense
DODD	Department of Defense Directive
DSP	Defense Support Plan
E-Payroll	Electronic Payroll
FAR	*Federal Acquisition Regulation*
FY	Fiscal Year
GAO	General Accounting Office
GPRA	Government and Performance Results Act
HUD	Housing and Urban Development
ICC	Interagency Collaborative Capacity
IPPD	Integrated Product and Process Development
IPT	Integrated Product Team
JEC	Joint Executive Council
JRAC	Joint Rapid Acquisition Cell
NHTSA	National Highway Traffic Safety Administration
NSF	National Science Foundation

OMB	Office of Management and Budget
OSD	Office of the Secretary of Defense
PM	Program Manager
PMO	Program Management Office
POC	Point of Contact
QDR	Quadrennial Defense Review
SME	Subject Matter Expert
VA	Department of Veterans Affairs (VA)

I. Introduction

A. Introduction

This chapter presents the purpose, problem statement, and research design for this project. It identifies the research questions we seek to answer and our methods. Finally, the significance and scope of the study are discussed, along with its organization and a brief summary.

B. Purpose of Study

With the Department of Defense Directive (DoDD) 5000.01 (2003) and *Federal Acquisition Regulation* (*FAR*) part 1.102 (General Services Administration, 2005) serving as the stimulus for our research, the purpose of this study is to assess the collaborative capabilities of several defense acquisition organizations. The research literature has identified a shortfall of collaboration research in measuring collaborative capabilities, and this research addresses the measurement problem (Bardach, 2001).

As defined by Thomas, Hocevar and Jansen (2006), "collaborative capacity is the ability of organizations to enter into, develop, and sustain inter-organizational systems in pursuit of collective outcomes" (p. 2). The purpose of our study is to provide the participating offices another tool for gaining insight into their operations as they interact with each other. It also is designed to contribute to the development of a method that can be used by other defense acquisition entities to identify their collaborative strengths and weaknesses.

C. Problem Statement

The leadership within the defense acquisition arena recognizes that collaboration among partners is pivotal to equipping the Warfighter with capabilities on schedule and on budget for combating global threats to national security. As described in Enclosure 1 of *DoDD 5000.01* (2003), the initiation and maintenance of

collaborative efforts through Integrated Product Teams (IPTs) is viewed as critical to success; without collaboration, the nation will lose its foothold for achieving public policy objectives. Under the statement of guiding principles for the federal acquisition system in *FAR* part 1.102 (General Services Administration, 2005), one of the pillars for the federal acquisition system's vision is a desire for all participants in the defense acquisition process to work as a team. By including teamwork as part of its vision, the defense acquisition community firmly believes that coming together as voluntary partners and supporting one another with a common goal to succeed is the best method for gaining public trust and for achieving objectives.

The government expects all entities involved in defense acquisition to create quality products and services through the effective and efficient employment of scarce resources. As described by Starling, Dobler, and Burt (2003), the need to include the contractor early in product development contributes to maximizing the contractor's motivation to create innovative techniques and assists in establishing clear communication channels in developing successful problem-solving approaches. Without collaboration, opportunities to identify and thwart the negative impact of emerging hostilities are more likely to be missed.

To this day, no one has defined a method to measure collaborative capacity. This is important for understanding its dimensionality and meaning and also to provide an organization with data that can guide organizational development activities to improve its collaborative capacity.

D. Research Questions

Our study is part of a long-term research project being conducted at the Naval Postgraduate School in Monterey, California. This study is the first one to be done on acquisition organizations. The goal of our research is to contribute to the better understanding of what collaborative capabilities (capacity) are and how they can be assessed, which is very important for theory and practice.

The two research questions that we address in our thesis are:

1. What is the effectiveness of the Collaborative Capacity Survey (Thomas, Jansen, Hocevar, & Rendon, 2008) in measuring the collaborative capacity of defense acquisition organizations?

2. What are the perceptions of the survey respondents from the two participating contract administration offices (known as CAO A and CAO B) and from the contractor (known as the Contractor), pertaining to their organization's collaborative capacity?

E. Research Design and Method

Throughout the acquisition process, different organizations collaborate in order to meet requirements. In our study, we analyze three organizations that participate in collaboration.[1] One of the organizations is a major defense contractor. The other two organizations are Defense Contract Management Agencies located in the United States. The organizations have requested that we maintain their anonymity throughout our research process.

In order to attempt to understand what collaborative capabilities are and whether or not they can be measured, we used a web-based, collaborative capacity questionnaire designed to measure what perceptions and attitudes employees hold about collaboration within their respective programs (Thomas, Hocevar, & Jansen, 2006; Thomas, Jansen, Hocevar, & Rendon, 2008).

Our study surveys members of the participating organizations to identify the factors that enable and impede inter-organizational collaboration. The results can be used to improve their local collaborative capabilities and to develop recommendations that may be pivotal to reinforce relationships between the government organizations and contractors as they strive to produce systems for combating threats to the nation.

[1] The original research design included two CAOs and two Contractors. However, one Contractor decided not to participate, and the study design was revised to consist of two CAOs and one Contractor.

F. Significance of Study

Collaboration is significant in today's acquisition environment, and there is a need for research on collaboration and the effects of collaboration. Organizations need to collaborate if they want to achieve the highest quality product, given time and fiscal constraints. A collaborative partnership is the sharing of resources and expertise among partners; organizations need to work together to pursue common goals. Through collaboration, different organizations can educate other key players in the acquisition process and solicit their involvement or support.

Contract management is increasing in importance, and organizations need to understand the significance of their purchasing offices in the acquisition process. The acquisition organization, the customer and the contractor need to work together to fully understand the requirement, which is where collaboration comes in. However, collaboration also is needed before the requirement is fully understood. The government relies on its contractors to be innovative to keep the United States ahead of its competition. By collaborating with its contractors, the US government may know well in advance of a requirement what products and services are available to the DoD.

G. Scope of Thesis

The focus of our thesis is on an organizational-level assessment of collaborative capacity. Our research grows directly out of prior research that examines the barriers and challenges versus the enablers of collaboration. It does not include assessments of the effects of collaboration or any comparative performance measures for collaboration. Our research is focused on assessing individuals' perceptions of their own organizations' capabilities to collaborate with other organizations in the acquisition environment. Our method limits us to the assessments of individual perceptions rather than direct observations of actual behavior.

H. Organization of Thesis

Our MBA project comprises five chapters. Chapter I provides an introduction and overview of this study as well as the purpose, the problem statement, the research questions, the method, the significance, and the scope of the thesis. Chapter II is a literature review discussing applicable theories, concepts, and models. Chapter III gives insight into the defense acquisition environment and discusses our method. Chapter IV contains our analysis and assessment results. Chapter V provides our recommendations, a summary and opportunities for further research.

I. Summary

The purpose of our study is to provide an assessment of the collaborative capabilities of various defense acquisition organizations and, in so doing, develop a better understanding of the dimensionality and meaning of what collaborative capacity means. We are doing a research project about collaboration within the DoD because we realize how important collaboration is in the acquisition environment. By involving the contractor early in the acquisition lifecycle it maximizes the contractor's motivation to create innovative techniques and assists with the establishment of clear communication channels between partners for developing successful problem-solving approaches. Our study surveys members of the three participating organizations to identify which factors enable and impede inter-organizational collaboration. The results can be used to improve their local collaborative capabilities and to develop recommendations that may be pivotal for the reinforcement of relationships between the government and contractors as they strive to produce systems for combating the nation's threats.

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II. Literature Review

A. Introduction

This chapter introduces a brief overview of relevant literature examined for this research project and begins with a definition of inter-organizational collaboration. Selected examples that best exemplify the use of inter-organizational collaboration within the federal government, within the Department of Defense (DoD), and within the defense acquisition community are presented. The chapter then discusses various conceptual frameworks for understanding inter-organizational collaboration as well as the challenge of operationalizing these frameworks for measuring and assessing collaborative capacity in an interagency context. Finally, the Collaborative Capacity Model and the Collaborative Capacity Survey are presented as a conceptual framework and assessment tool for identifying factors that enable or impede collaborative capacity and for understanding, measuring, and assessing collaborative capacity within the defense acquisition community.

B. Background

1. Inter-organizational Collaboration Defined

Various researchers characterize collaboration as a process in which people engage toward the accomplishment of a shared goal (Bardach, 2001; Wood & Gray, 1991; Gray, 1985). As described by Huxham (1993), this process extends beyond the boundaries of coordination because it involves more than the establishment of effective communication and positive mutual respect among those members involved in the problem-solving endeavor (p. 22). Collaboration requires significant interdependence in the design of work efforts and is all about achieving value through the synergistic use of diverse talents. Collaboration is also characterized by a need for members to receive substantial latitude in their implementation of the selected work design effort in order to truly reach a successful solution. In essence,

collaboration transcends the mechanics of cooperation to a higher level of engagement.

The concept of inter-organizational collaboration involves the engagement of organizations through partnerships to achieve joint development of a work effort through shared resources. Huxham (1993) refers to the development of a strategy that can be "co-created" and owned jointly by the organizations involved. She elaborates that inter-organizational collaboration "achieves something unusually creative that no organization could have produced on its own and when each organization, through the collaboration, is able to achieve its own objectives better than it could alone" (p. 22).

Gray (1985) provides a second, similar interpretation of the inter-organizational collaboration process. The phrase "domain level collaboration" is used to describe a process in which member organizations create relationships between each other but operate in a space, known as the "problem domain," beyond the boundaries of any one organization. When a problem or interest presents itself across traditional organizational boundaries and cannot be realistically resolved by a single entity, the "problem domain" becomes the focal point for "domain level collaboration" and represents a potential for developing powerful networks among autonomous entities.

Many researchers claim the benefits of inter-organizational collaboration are immense when organizations are truly interdependent in terms of common needs, interests, and goals (Thomas, Hocevar & Jansen, 2006; Wood & Gray, 1991; Gray, 1985). Cross-organizational collaborative activities are anticipated to produce dramatically new results that would not be achieved if organizations had proceeded independently. Specifically, these collaborative activities focus partner energies to streamline processes and conserve scarce resources in ways that reinforce, rather than undermine, each organization's role in the collaborative effort. In addition, these collaborative activities guide the interactions of those in the partnership or alliance toward avenues of exploration normally not pursued by a single organization

because of the sheer complexity of engaging in this type of approach for solving problems.

2. Inter-organizational Collaboration in the Federal Government

Recognition of inter-organizational collaboration as a critical process for successful complex problem solving within the federal government is evident in numerous documented examples reviewed for this research project. Two instances cite inter-organizational collaboration as a "must have" for the federal government in order to create maximum value for the public sector. In the first instance, President Bush identified the expansion of electronic government (e-government) as one of his top five priorities in his management agenda. In response to this agenda, the Office of Management and Budget (OMB) recommended and implemented 25 initiatives, four of which were selected by the General Accounting Office (GAO, 2003, October) for review due to their demand for "a high degree of inter-organizational collaboration" (p. 1). The GAO applauded agency progress to promote collaborative efforts among partners for the development of E-Payroll, Geospatial One-Stop, Integrated Acquisition Environment, and Business Gateway. These four initiatives focused on collaborative activities to merge similar services provided by multiple agencies into a collective base for enhanced and streamlined customer support. Without inter-organizational collaboration, the GAO stated that movement toward full achievement of this presidential management priority would be virtually impossible.

In the second instance, President Bush also identified the linking of budgetary resources to results among his top five management agenda priorities. This priority was established in an effort to satisfy the requirements of the Government Performance and Results Act of 1993; it aligned with the President's Budget and Performance Integration initiative. A GAO report (2003, May) titled "Program Evaluation—An Evaluation Culture and Collaborative Partnerships Help Build Agency Capacity" describes the challenges federal agencies encountered when attempting to demonstrate program results. The report identified the activity of building collaborative partnerships among agencies as one of three key elements for

developing a capacity to evaluate program effectiveness. GAO attributed collaborative partnerships, "the sharing of resources and expertise among stakeholders," as a common theme for the positive evaluation capacity observed during its case studies of the Department of Health and Human Services, the Department of Transportation, Housing and Urban Development (HUD), the National Highway Traffic Safety Administration (NHTSA), and the National Science Foundation (NSF) (p. 9).

3. Inter-organizational Collaboration in the Department of Defense

Implementation of the inter-organizational collaboration process in the federal government's DoD also continues to gain momentum. Three recent GAO reports capture the essence of how important DoD leadership views this process to be in achieving mission-critical objectives that span its agencies. In each of these three reports, the process of inter-organizational collaboration is either cited as the impetus for the accomplishments achieved to date or recommended as the number one process to implement for agencies struggling to produce positive results.

In a 2007 GAO report, the DoD was applauded for its collaborative efforts during the 2006 Quadrennial Defense Review (QDR). The QDR serves as a periodic national defense strategy review, during which the DoD identifies capabilities required to meet threats by detailed examination of its defense program and policy elements every four years. The QDR then strives to identify and address misalignments between national strategy, force structure, modernization, infrastructure, and budget plan. Without inter-organizational collaboration among QDR participants, opportunities to identify and thwart the negative impact of current, emerging and future hostilities are more likely to be missed. According to a GAO report summary, the 2006 QDR:

> benefited from the sustained involvement of key senior DoD officials who provided top-down leadership and oversight of the review process. For the first time, DoD collaborated extensively with several interagency partners, such as the Department of Homeland Security (DHS), to identify capabilities that would address current and future security threats. Leaders of the QDR's

six study teams collaborated with each other to avoid duplication of work as they developed options to address DoD's challenges. (p. 5)

A more recent GAO report (2008b, March), recommended the co-creation of a National Security Space Strategy by the Secretary of Defense and the Director of National Intelligence (DNI). This GAO recommendation was submitted as the only feasible solution to what GAO perceived as unacceptable capability gaps for mission-essential operations and wasteful redundancies in other space activities. Because the DoD and the national intelligence communities both depend on similar space assets for accomplishing often overlapping national security objectives, GAO recommended a partnership between the two agencies as the best option for ensuring that necessary resources are allotted for space activities. Even though the DoD and DNI agreed that a joint strategy would benefit both organizations, a draft of the National Security Space Strategy developed in 2004 was never officially recognized by either entity as an overarching strategic guidance for ensuring that future space programs would be designed to meet the needs of both agencies. In addition, the DoD and DNI retained "differences of opinion" in strategy implementation for space operations. As a result, the GAO urged Congress to facilitate a partnership between the two agencies in an effort to resolve "differences of opinion" in strategy implementation as well as any "cultural differences" identified as barriers. The GAO elaborated that American "space superiority depends on unity of effort among the Defense, intelligence, and civil government communities in collaboration with the US private sector" (2008b, March, p. 5).

Finally, a 2008 GAO report (April) documented improvements in collaboration to share health resources between the DoD and the Department of Veterans Affairs (VA). As the result of what GAO describes as significant Congressional and Executive involvement over a span of two decades, the DoD and the VA continue to successfully engage each other through inter-organizational collaboration for improving health care support for those who serve or have served in the Armed Forces. Specifically, the two agencies have accomplished several collaborative

initiatives through their Joint Executive Council (JEC), an interagency leadership committee of VA and DoD officials. The most notable include:

- Development of joint health care outcome metrics
- Routine sharing of medical data collected during health assessments
- Funding of medical surveillance initiatives and long-term research projects.

4. Inter-organizational Collaboration in the Department of Defense Acquisition Community

Leadership within the defense acquisition arena recognizes the need for collaboration among partners as pivotal to equipping the Warfighter with quality weapons systems for combating global threats to national security. As described in Enclosure 1 of the *Department of Defense Directive (DODD) 5000.01*, the initiation and maintenance of collaborative efforts through Integrated Product Teams (IPTs) is viewed as absolutely critical to success; without this action, the nation risks losing its foothold for achieving public policy objectives. Under the statement of guiding principles for the federal acquisition system in *Federal Acquisition Regulation (FAR)* 1.102, a desire for all participants in the defense acquisition process to work as a team could be viewed as one of the pillars for the federal acquisition system's vision. By including teamwork as part of the vision for the federal acquisition system, the *FAR* appears to communicate that coming together as voluntary partners and supporting one another with a common goal to succeed is the best method for gaining public trust and for achieving objectives.

The Defense Acquisition Performance Assessment (DAPA) issued a report in 2005 that characterized the DoD's acquisition system as "fragmented." Since then, the use of inter-organizational collaboration to integrate the three processes of budget, requirements, and acquisition (known as the "Big A" acquisition process) has gained momentum. This approach was a major shift in strategy for the DoD's acquisition community; its previous focus was the acquisition process (known as the "Little a" acquisition process). In his 2007 Defense Acquisition Transformation

Report to Congress, the Secretary of Defense outlined several completed and ongoing acquisition initiatives among the department's agencies designed to integrate the budget, requirements, and acquisition processes along with the elements of workforce, industry, and organizations into a single force for delivering capability to military forces. A sampling of these acquisition initiatives includes:

- Information sharing between defense agencies involving the use of support contractors as part of the Total Force integration plan
- Synchronization of the Defense Acquisition Executive Summary Review, Joint Requirements Oversight Council, the Overarching Integrated Product Team, and Product Support Review meetings to leverage information regarding high profile Acquisition Category (ACAT) I programs
- Software Engineering and System Assurance Organization sponsorship of community workshops between DoD, industry and academia for practice improvement strategies in major acquisition programs
- Establishment of the Joint Rapid Acquisition Cell (JRAC) within the Office of the Secretary of Defense (OSD) for addressing joint immediate Warfighter needs through collaboration with other agencies
- Establishment of the Defense Logistics Management System to facilitate integration and interoperability between acquisition, finance, and logistics systems used by DoD agencies, industry, and other partners

The Secretary of Defense further recognized industry as "the key enabler of the Department's efforts to maintain military superiority" (DAPA, 2005). In essence, the DoD's success relies upon a partnership with industry to "reduce costs, speed acquisitions, decrease developmental risks, make leading-edge technologies accessible, increase surge capabilities, and leverage competition inherent in the global marketplace" (pp. 6 -7). As described by Starling, Dobler, and Burt (2003), the need to include the contractor early in product development is paramount because it maximizes the contractor's motivation to create innovative techniques and assists with the establishment of clear communication channels between the partners in order to develop successful problem-solving approaches. Thus, inter-

organizational collaboration is important in defense acquisition because the government requires all entities involved in this field to create quality products and services through the effective and efficient employment of scarce resources.

An excellent example of collaboration in a "Big A" acquisition process is that of the Defense Contract Management Agency (DCMA) Aircraft Propulsion Operations–Rolls Royce and the Rolls-Royce Corporation. These organizations quickly discovered that "close collaboration and teamwork" for resolution of what appeared to be routine problems required less effort and significantly fewer resources than originally allotted under a strategy to independently pursue options for resolution (Vernon, Rosario, & Kleiner, 2007, p. 203). DCMA Aircraft Propulsion Operations–Rolls Royce is located in the contractor's facility in Indianapolis, Indiana, for the primary purpose of managing contractor relations on behalf of the procurement activity–with the ultimate goal of achieving on-time delivery of gas turbine engines to the Warfighter. In order to measure how well Rolls Royce operations were contributing to delivery requirements, DCMA and Rolls-Royce implemented their first IPT to track performance and agreed to use the proposed DCMA On-Time Delivery Performance Goal of 70% as a baseline for 2002. IPT members shared information, discussed options, and selected a solution that resulted in an on-time delivery outcome of 90% in 2006. Since then, DCMA and Rolls-Royce now share audit schedules, findings, and trends in an effort to develop effective corrective and preventive action programs. Before 2002, collaboration between the two organizations at this level simply did not exist.

C. Collaborative Capacity–Previous Research

As demonstrated by the examples presented in this literature review, inter-organizational collaboration has been cited as a critical requirement for successful outcomes; and for those agencies struggling to achieve their goals, lack of inter-organizational collaboration has been cited as a factor accounting for failure. Using the Government and Performance Results Act (GPRA) as the impetus for its 2005 report, the GAO discussed the urgent need for enhancing and sustaining inter-

organizational collaboration. However, the identification of what factors directly contribute to the enhancement and sustainment of inter-organizational collaboration and what barriers truly present a challenge remain elusive for the defense acquisition community as well as for all of the federal government.

To gain insight into the nature of effective inter-organizational relationships, this literature review focuses on research efforts (Weber, Lovrich, & Gaffney, 2007; Thomas, Hocevar & Jansen, 2006; Bardach 2001; Huxham, 1993; Gray, 1985) that explore how an environment conducive to fostering inter-organizational collaboration could be created and how an organization could better position itself to collaborate with other organizations when it seems obvious and logical to do so. This concept is termed "collaborative capacity." In an inter-organizational context, Thomas et al. (2006) define collaborative capacity as "the ability of organizations to enter into, develop, and sustain inter-organizational systems in pursuit of collective outcomes" (p. 2). In a second instance, Huxham (1993) employs the phrase "collaborative capability" as "the capacity and readiness of an organization to collaborate" (p. 23).

Across the board, researchers (Weber et al., 2007; Thomas, Hocevar, & Jansen, 2006; Thomas, Jansen, Hocevar, & Rendon, 2008; Bardach 2001; Huxham, 1993; Gray, 1985) agree that collaborative capacity is absolutely essential for entities involved in inter-organizational collaboration and for those that desire the incorporation of a collaborative culture for the long term. However, the approaches to the measurement and to the assessment of collaborative capacity are still a work in progress in the research community. To establish dimensions to be considered when measuring an organization's collaborative capacity, a variety of models have been derived from different theoretical perspectives and augmented by research methods to include case analyses and the "participatory" approach which "starts from an exploration of the issues as seen by the client, rather than from an abstract understanding of collaboration" (Huxham, 1993, p. 22).

While the research efforts of Gray (1985), Huxham (1993), Bardach (2001) and Weber et al. (2007) provide some insights as to the dimensions for

understanding the process of inter-organizational collaboration, the question of how to measure and assess collaborative capacity in terms of which factors affect these dimensions remains unanswered. For instance, Gray's process model of collaboration (1985) describes the conditions necessary for the process of collaboration to materialize (see Table 1), but does not specifically address the measurement of collaborative capacity. She states, "implicit in this discussion is the idea that domain level dynamics can be managed to improve the likelihood that collaborative relationships are achieved and sustained" when an organization has progressed through these three phases of development (Gray, 1985, p. 916). However, Gray points out that understanding "the necessity and relative contribution" of the facilitative conditions initially identified as instrumental for successful collaboration requires further research (1985, p. 932).

Gray (1985) cites J.E. McCann's three developmental phases as a basis for how an organization should proceed to create an organizational domain ideal for building collaborative capacity. The first phase is problem setting and centers on the idea of establishing the problem situation in explicit terms for interaction so that "stakeholders negotiate issues of legitimacy and come to appreciate the interdependence which exists among themselves" (pp. 916 and 917). In the second phase known as direction setting, partners strive to develop "shared interpretations" of what is to be achieved. Structuring is the third phase and serves as the process for "institutionalizing the shared meanings and prevailing norms that emerge gradually as the domain develops" (p. 917). Structuring provides partners a viable framework for managing ongoing interactions in a cohesive and systematic method.

Table 1. Facilitative Conditions at Each Developmental Phase of Collaboration
(Gray, 1985)

Developmental Phase	Facilitative Condition
Problem-setting	- Recognition of interdependence - Identification of a requisite number of partners - Perceptions of legitimacy among partners - Legitimate/skilled convenor - Positive beliefs about outcomes - Shared access power
Direction-setting	- Coincidence of values - Dispersion of values
Structuring	- High degree of ongoing interdependence - External mandates - Redistribution of power - Influencing the contextual environment

Huxham (1993) identifies nine dimensions of collaborative capability during her exploration of three organizations through "participatory" research. However, Huxham points out that these model dimensions are dynamic because the concept of collaborative capability is also dynamic. As a result, the capability rating of any organization on these dimensions and the relative importance of each dimension is subject to change over time. In addition, the level at which each dimension is applicable—whether at a specific project level, at the strategic level or both—is not well defined and prompts the need for additional field validation through the use of an assessment tool.

Bardach (2001) relies on two theoretical perspectives to describe the developmental processes necessary for effective inter-organizational collaborative

capacity: craftsmanship theory and evolutionary theory. Craftsmanship theory represents the perspective that "sees developmental dynamics as an intendedly efficient sequence of steps taken by one or more craftsmen to fashion collaborative arrangements out of what are usually rather unpromising materials" (p. 151). Bardach frames "craftsmen" as the embodiment of human creativity instrumental in building collaborative capacity in such a way that effectively survives the agency's natural intent to preserve its autonomy and resources. Evolutionary theory represents the perspective that centers on "emergent properties of a collectivity that are created by the explicitly noncreative, wholly reactive, interactions of individuals within the collectivity" (p. 151).

Table 2. Capacity Platforms for the ICC
(Bardach, 2001)

Platform	Description
Creative Opportunity	Facilitates the creation of value through interagency collaboration.
Intellectual Capital	Facilitates the creation of a strategic idea about collaborative action.
Implementation Network	Facilitates the creation of a vision for the emerging ICC.
Advocacy Group	Facilitates the creation of a loose structure for collecting resource commitments from partners.
Trust	Facilitates the creation of capacity to work effectively with one another.
Leadership Acceptance	Facilitates the creation of acceptance or demand for leadership.
Communication Network	Facilitates the creation of communication within the implementation network
Steering Capacity	Enables operating subsystem design revisions.
Operating Subsystem	Enables functional elements to begin work.
Continuous Learning	Allows for the ICC to learn how to make improvements by monitoring its performance.

Bardach arranges his craftsmanship dimensions into two independent columns that merge and form what he terms Interagency Collaborate Capacity, or "The ICC" (See Table 2). This ICC is essentially a virtual organization in that "it is a psychological reality to the participants as are many formal organizations to those who participate in them" (p. 152). Bardach describes each dimension as a type of a

capacity that collectively forms the ICC by operating as a baseline or “platform” for establishing the next capacity type. For instance, the first column begins with the creative opportunity platform, whereby participating organizations come to realize the potential value of interagency collaboration. Once this creative opportunity has been established, the intellectual capital platform helps to define the scope of this opportunity, while the implementation network platform provides a baseline from which to select participants deemed instrumental for guiding collaborative efforts. These three capacity platforms collectively lead to the formation of the advocacy group platform, which serves as a legitimate structure for collecting resource commitments from partners. At the same time, the second column involves progression through the capacity platforms of trust, acceptance of leadership, and communication. This progression leads to the development of working relationships that extend beyond the traditional boundaries of coordination. The interactions between the two capacity platform columns ultimately equip the ICC with improved steering capacity, operating subsystem readiness, and continuous learning capability. As a result, the ICC is capable of improving long-term performance by monitoring work processes, detecting opportunities for improvement, selecting the best process option for implementation, and effecting process changes as required.

Table 3. Emergent Properties Affecting the ICC
(Bardach, 2001)

Property	Description
Momentum Processes	A set of processes that affect the climate of opinion and attitude and include enthusiasm, the bandwagon effect, consensus, and trust
Legitimacy of Leadership	A set of unit-enhancing behaviors that help the ICC accomplish useful work. Legitimacy may be in the form of a formal leadership role or an informal self-appointment that is widely accepted as a formal leadership role
Commotion Processes	A set of disruptions that affect ICC development and include intellectual capital growth due to participant turnover, disappearance of competing opportunities for creating value, and changes in political and budgetary environments. Too little disruption causes participants to focus on issues within their own agencies. Too much disruption leads to endless meetings without productivity

The evolutionary theory dimensions are described as "emergent properties" that affect the interactions of the craftsmen dimensions under the ICC as they develop collaborative capacity (see Table 3). Specifically, momentum processes include enthusiasm, trust, and consensus and appear to positively impact support for inter-organizational collaboration. However, commotion processes appear to impede effective ICC development. For example, changes in political and budgetary environments that increase competition for scarce resources or that impose conflicting priorities may lead to too many disruptions that cause participants to focus on issues within their own agencies.

In summary, craftsmanship dimensions are the opportunities for building collaborative capacity, and evolutionary dimensions are the processes that affect the level of expectations and resources for building those opportunities (p. 163). While Bardach provides a framework for understanding the dimensions of inter-organizational collaboration and collaborative capacity, this literature review did not reveal what factors impact each of these dimensions nor a process for measuring and assessing these factors.

Table 4. Capacity Dimensions and Associated Factors
(Weber et al., 2007)

Vertical Capacity	Horizontal Capacity	Vertical – Horizontal Capacity
- Compliance rate with associated laws and regulations	- Social Capital - Institutional commitment to pre-existing vertical goals	- Partner perception of trust - Partner perception of good faith bargaining efforts - Partnership perception of utility problem-solving approaches - Partnership perception of resource allocation toward goals

Weber et al. (2007) applaud the work that Bardach and other researchers have done in the area of collaborative capacity, but state that "there is virtually nothing in that literature related to collaborative capacity as an outcome–the idea of a collaborative capacity assessment framework" (p. 196). Thus, Weber et al. (2007) attempt to conceptualize and operationalize the dimensions of their collaborative problem-solving capacity model to address the question of which factors determine whether collaborative capacity is enhanced, unaffected, or diminished. Weber et al. (2007) developed a collaborative capacity assessment framework comprised of three dimensions: vertical capacity, horizontal capacity, and partnership capacity. Factors associated with each dimension were developed from an analysis of data collected through mail surveys (see Table 4).

The vertical capacity dimension involves the hierarchical relationship between the entities, their legal authority to exist and operate, and their official missions. Weber et al. (2007) claim that capacity assessment merely becomes a matter of calculating compliance rates with applicable laws and regulations. The horizontal capacity dimension evolves from the realization that solving problems of a complex nature is next to impossible for any one organization to pursue; and this realization

essentially compels autonomous entities towards interdependency. Horizontal capacity assessment then becomes a matter of measuring intangibles, such as social capital and institutional commitment to existing hierarchical goals, in the vertical dimension. The partnership capacity dimension captures the relationship between the horizontal and the vertical dimensions. This dimension can be measured using partners' perceptions of and attitudes towards trust, good-faith bargaining, collaborative problem-solving approaches, and resource sharing for partnership goals.

Weber and others (2007) point out that post-collaborative testing was done in their study and that additional studies using pre- and post-collaborative effort measures were needed to better understand the relationships that existed among the variables across the three capacity dimensions. For example, if the horizontal score was low and the remaining two dimensions exhibited high scores, Weber et al. wonder if a successful partnership might enhance the horizontal dimension to increase the collaborative capacity.

D. The Collaborative Capacity Model and Collaborative Capacity Survey

This literature review reveals that only Thomas et al. (2006, 2008) appear successful in the development of a systematic assessment mechanism that operationalizes their conceptual framework for identifying the specific factors that collectively make up collaborative capacity and for measuring these factors to assess the readiness of an organization to collaborate. Based on Lewin's "force field analysis" model, in which driving forces (enablers) must dominate over restraining forces (barriers) in order to increase collaborative capacity, the Collaborative Capacity Model is a comprehensive framework for addressing the purpose and research questions of our study. The Collaborative Capacity Model also addresses the challenges previous researchers encountered as they attempted to standardize, while allowing flexibility for the measurement and assessment of collaborative capacity in a variety of situations. Describing the diagnosis of

collaborative capacity as an organizational development process, the collaborative capacity model employs Galbraith's five organizational design domains of purpose and strategy, structure, lateral mechanisms, incentives, and people (see Table 5). According to Thomas et al. (2006), these domains for each participating organization must not only be in concert with each other in order to induce collaborative capacity, but they must also be in concert across organizations. In other words, the alignment of these domains represents a critical point at the domain level for effecting positive capacity change when collaboration between organizations must occur and when problem resolution cannot be achieved by a single organization.

Table 5. Domains of the Collaborative Capacity Model
(Thomas et al., 2008)

Organization Design Domain	Success Factors	Barrier Factors
Purpose and Strategy	- "Felt need" to collaborate - Common goal or recognized interdependence - Adaptable to interests of other organizations	- Divergent goals - Focus on local organization over cross-agency (e.g., regional) concerns - Lack of goal clarity - Not adaptable to interests of other organizations
Structure	- Formalized coordination committee or liaison roles - Sufficient authority of participants	- Impeding rules or policies - Inadequate authority of participants - Inadequate resources - Lack of accountability - Lack of formal roles or procedures for managing collaboration
Lateral Mechanisms	- Social capital (i.e., interpersonal networks) - Effective communication and information exchange - Technical interoperability	- Lack of familiarity with other organizations - Inadequate communication and information sharing (distrust)
Incentives	- Collaboration as a prerequisite for funding or resources - Leadership support and commitment - Absence of competitive rivalries - Acknowledged benefits of collaboration (e.g., shared resources)	- Competition for resources - Territoriality - Organization-level distrust - Lack of mutual respect - Apathy
People	- Appreciation of others' perspectives - Competencies for collaboration - Trust - Commitment and motivation	- Lack of competency - Arrogance, hostility, animosity

For building the Collaborative Capacity Model, Hocevar, Jansen, and Thomas (2004) selected DHS as their first setting and initiated research to build a conceptual

framework for understanding effective and ineffective inter-organizational collaborations. They collected data from senior DHS security managers on barriers and enabling factors of collaboration and then analyzed the data into domains, which were organized according to an open systems model. Their resulting model was used to develop a series of interview and survey questions that centered on the five organizational design domains discussed in the previous paragraph and provided the framework for the creation of the Collaborative Capacity Survey. If desired, organizations can tailor this survey and use it to assess their "readiness" for engaging in the process of inter-organizational collaboration involving public or public-private partnerships.

The most recent efforts of Thomas et al. (2008) focused on refinement and field validation of the Collaborative Capacity Survey using data from a sample within the defense acquisition community. The domain of strategy and purpose is comprised of collaboration scales such as the *need to collaborate*, *strategic collaboration*, and resource investments in collaboration. "Purpose can be driven by a commonly perceived risk or threat ("felt need") or a common goal such as improving information sharing, coordinated training or overall preparedness" (Thomas et al., 2006, p. 7). When organizational goals or missions overlap, the requirement to work together to achieve those goals through inter-organizational collaboration becomes the logical approach. However, lack of a common purpose in concert with the inability to adapt to the interests of other organizations act as barriers to inter-organizational collaboration and likely impede the capacity to collaborate. As demonstrated in the 2005 DAPA report discussed in previous paragraphs of this chapter, delivering capability to military forces was a shared purpose among organizations of the defense acquisition system but the system was "fragmented" in terms of local focus on organizational goals. Thus, the situation necessitated integrating the three "Big A" acquisition processes into a single force.

The domain of structure is comprised of the *structural flexibility* scale and involves formalized positions and processes for coordination among participants. By

establishing clear roles with sufficient authority to make decisions, accountability as well as legitimacy is assigned. When organizations provide a formal framework that partners can use for managing the integration of joint activities, collaboration is supported as a legitimate activity. For example, the defense acquisition community's initiation and maintenance of collaborative efforts through Integrated Product Teams (IPTs) is described in Enclosure 1 of the *Department of Defense Directive (DODD) 5000.01*. In a second instance, the DCMA-Rolls Royce article (Vernon et al., 2007) presented in a previous section of this chapter clearly demonstrates how effective the use of IPTs can be for achieving goals.

The lateral mechanisms domain is comprised of *collaborative learning systems*, *information sharing*, and *social capital*. Interpersonal networks, effective information exchanges, and technical interoperability may facilitate interaction among those engaged in inter-organizational collaboration. These elements provide the tools for understanding, developing, and choosing the right actions for achieving goals. However, lack of familiarity with other organizations and distrust may act as barriers to the capacity to collaborate. Illustrating the importance of addressing barriers, the acquisition initiatives extracted from the 2005 DAPA report (and outlined in the preceding paragraphs) were implemented to keep communication lines open between DoD agencies, industry, and other partners. In order to transition to this new mindset, the Defense Logistics Management System was one of a series of programs established to facilitate interoperability between acquisition, finance, and logistics systems used by partners in the defense acquisition community. As described by the DCMA-Rolls Royce article (Vernon et al., 2007), the sharing of audit schedules, findings, and trends to develop preventive and corrective action programs became a common practice as the interaction between organizational members increased and evolved in to trusting partnerships.

The incentives domain is comprised of collaboration scales such as *incentives and reward systems*. The use of collaboration as a prerequisite for funding, leadership support, internal reward systems for recognizing workforce

members' inter-organizational accomplishments, and acknowledged benefits of collaboration through the sharing of resources appear to facilitate collaborative efforts. But these activities must be a matter of routine and not perceived as a one-time event in order to enhance collaborative capacity. As evidenced in the 2005 DAPA report, top-level support from the office of the Secretary of Defense was necessary to begin the integration of the three processes of "Big A" acquisition. This support came in the form of public recognition of industry and other stakeholders as partners. In addition, a public commitment to provide resources for training, education, and certification opportunities may serve to incentivize workforce members towards collaboration. By taking this approach, barriers such as lack of mutual respect and apathy might well be avoided.

The domain of people is comprised of *individual collaborative capacities*. The proper establishment of this domain directly impacts the other domains and collectively impacts collaborative capacity. Appreciation of others' perspectives, trust, and competencies for collaboration allow for personnel to go beyond the traditional boundaries of working with other organizations. Believing that the intent of each others' actions to collaborate is sincere is critical. Without trust and respect for others, the organization's capability to develop collaborative capacity is thwarted. DoD acquisition leadership strives to build that trust and demonstrate its appreciation of industry's perspectives by including industry early in product development and engaging organizations in roundtable discussions (DAPA, 2005).

While Gray (1985), Bardach (2001), Weber et al. (2007), and Thomas et al. (2008) employ different terminologies to describe aspects of their conceptual frameworks, similarities are apparent among the research results. For example, each set of researchers discusses recognized legitimacy of a group engaged in collaboration, the perception of shared values and goals, the establishment of trust between group members, the commitment of resources to the collaborative effort, and the development of individual capabilities to collaborate as important elements for collaborative capacity. In addition, Bardach's trust, leadership acceptance, and

communication network platforms are similar to the factors listed under the domain of lateral mechanisms from Thomas et al. In another instance, Bardach's implementation network and advocacy group platforms are similar in nature to the domain of structure from Thomas et al. Finally, the impact of driving forces and restraining forces upon an organization's capacity to collaborate (Thomas et al., 2008) is similar to Bardach's discussion of the effect of momentum processes and commotion processes upon ICC development.

E. Summary

This chapter introduced a brief overview of relevant literature examined for this research project and opened with a definition of inter-organizational collaboration. Selected examples that exemplify the use of inter-organizational collaboration within the federal government, within the Department of Defense (DoD), and within the defense acquisition community were also presented. This chapter then discussed various conceptual frameworks for understanding inter-organizational collaboration as well as the challenge of operationalizing these frameworks for measuring and assessing collaborative capacity in an interagency context. Finally, this review introduced the Collaborative Capacity Model and the Collaborative Capacity Survey as a conceptual framework and assessment tool for identifying factors that enable or impede collaborative capacity and for understanding, measuring, and assessing collaborative capacity within the defense acquisition community.

III. Defense Acquisition Environment and Research Method

A. Introduction

The first purpose of this chapter is to describe the defense acquisition environment and the organizations that collaborate with one another in order to successfully acquire major defense systems. This chapter explains why collaboration is critical within the defense acquisition environment and throughout the acquisition process.

The second purpose of this chapter is to describe the methods used in our study beginning with the selection of our study participants, then our study design, followed by the administration of the assessment, and finally the analysis approach.

B. Defense Acquisition Environment

The defense acquisition environment faces many problems. The Government Accountability Office (GAO) found that 63% of the 72 major weapon system programs they assessed had changed requirements once system development began, and that they also experienced significant program cost increases (GAO-08-467SP). The GAO did an analysis of the major defense acquisition program portfolios within the DoD and found that 44% of the programs had an increase in program acquisition unit cost of 25% or more (GAO-08-467SP). The GAO also found that "on average, the current portfolio of programs has experienced a 21-month delay in delivering initial operational capability to the Warfighter" (GAO-08-467SP, p. 8). A change to requirements after development begins causes delays, which ultimately leads to increased costs. The defense acquisition environment may be in poor condition now, but there is a way to get back on the right path.

The defense acquisition environment is unlike any other acquisition environment. According to Rendon and Snider, the defense acquisition environment

is very unique because of its military aspect, the highly advanced technologies, and the fact that the acquisition projects are managed by public officials and financed with public funds (Rendon and Snider, 2008). Inter-organizational collaboration throughout the entire acquisition lifecycle is absolutely essential for a successful acquisition program. Since the defense acquisition environment is extremely complex, it is critical that all the different organizations that have a vested interest in an acquisition collaborate with one another.

Within the DoD there are three decision support systems that have the ability to lead the acquisition outcome towards success. The requirements system, also known as the Joint Capabilities Integration and Development System, determines if there is a gap between what the Warfighter has and what they need in order to accomplish their mission. This system is not based on time or an event, but instead is driven by the needs of the Warfighters. The next system is known as the resource management system, also known as the Planning, Programming, Budgeting, and Execution System. The resource management system provides the necessary funding for the acquisition of the major defense weapon systems (Rendon and Snider, 2008). The third system is known as the Defense Acquisition System. All three of these systems need to collaborate with one another in order to successfully acquire the most advanced capabilities for the DoD. Our study focuses on the Defense Acquisition System and the collaborative capacity of the different organizations within the acquisition system.

There are three major elements involved in the Defense Acquisition System: the project lifecycle, the Program Manager (PM), and the Integrated Product Teams (IPTs). Every project has a lifecycle associated with it. Some projects have a long lifecycle of many years, while others have a shortened lifecycle and are terminated before production even begins. Within the lifecycle are phases and milestones that allow the acquisition team to track the project throughout the acquisition process. Every program has an officially designated PM, who acts as a facilitator, coordinator, and integrator of all the different activities being performed by the IPTs (Rendon and

Snider, 2008). The PM is ultimately responsible for the program's success. The DoD and the contractor each have a PM who work together to develop major defense systems. The DoD PM must have the ability to collaborate effectively with the IPTs and the contractor PM in order to acquire critical weapons systems. Lastly, IPTs play a big role within the acquisition process. The IPT is a cross-functional team that represents all the participants in the defense acquisition process (Rendon and Snider, 2008). The IPT encompasses all the disciplines within the acquisition environment, including the PM, the contracting officer, the finance manager, and the contractor just to name a few. The three elements of the acquisition process are critical to the project's success. Just as there are three elements to the acquisition process, there are also three organizations: the PMO, CAO, and the contractor.

C. Program Management Office (PMO)

The PMO is the central hub for major acquisition programs. The Program Manager (PM) is the leader of the program and oversees the IPTs. The PM is a very important key player in the defense acquisition process. Program management is defined as "the centralized, coordinated management of a group of projects to achieve the program's strategic objectives and benefits" (Rendon and Snider, 2008, p. 2).

"Program managers are responsible for completing the project within budget, on time, and according to the specifications. These three areas of the project reflect the basic PM's goals: achieving the cost, schedule, and performance objectives of the project" (Rendon and Snider, 2008, p. 3). The best way a PM can meet its goals is by collaborating with the contractor and the Contract Administration Office to make sure the contractor is within the budgeted cost, and on schedule, and to have quality inspections to ensure the performance specifications are being met. The PM needs to stay involved throughout the acquisition process and must feel a sense of ownership for their program. "Although many stakeholders represent different parts of the acquisition enterprise, the PMO is the locus of the government's managerial activities" (Dillard, 2008, p. 261).

The PM has the main responsibility to ensure the acquisition program is successful. "Internally, PMOs often organize in ad hoc teams oriented to specific areas of each project. This tendency stems largely from DoD initiatives over the last 10 years to implement integrated product and process development (IPPD) using integrated product teams (IPT)" (Dillard, 2008, p. 261). The IPTs need to collaborate throughout the acquisition with one another because each team is working on a different project within the same program.

D. Contract Administration Office (CAO)

The CAO plays a very important function within the defense acquisition team. The CAO can provide a number of functions for the PMO. *Federal Acquisition Regulation 42.3* lists 70 different functions a CAO can provide. The CAO and the PMO must collaborate to figure out what functions the CAO will perform and what functions the PMO will oversee.

The primary CAO in the DoD is the Defense Contract Management Agency (DCMA). The DCMA normally administers contracts when the contract is a major defense systems contract. The DCMA is a DoD combat-support agency that provides customer-focused acquisition support and contract management services (Rendon and Snider, 2008). The DCMA provides a broad range of acquisition management services for the DoD. DCMA collaborates with the PMO during the pre-award and post-award phases. "During the pre-award activities, the DCMA provides pre-contractual advice to customers to help them construct sound solicitations, identify potential performance risks, select capable contractors, and write contracts that can be effectively administered" (Rendon, 2008, p. 177). During contract administration, the DCMA ensures the contractor's products, costs, and schedules comply with the terms and the conditions of the contracts. The DCMA has the ability to monitor contractor performance through data tracking and analysis and on-site surveillance (Rendon and Snider, 2008). The DCMA is a very important key player for the DoD. The DCMA collaborates with the contractor daily at times

because their offices are co-located. The DCMA and the contractor normally share the same buildings and have meetings at least once a week, if not more.

E. Contractor

The contractor is another key player in the defense acquisition lifecycle. Without the contractor, the DoD would have to make everything in-house. The DoD relies on its contractors to keep up with technology, to be innovative, to free up its human resources, and to give the DoD the ability to have the best military this world has ever seen. The main contractors that do the most business with the DoD are Lockheed Martin, Boeing, Northrop Grumman, General Dynamics and Raytheon (National Journal Group, 2008). Each of these contractors performs critical roles for the DoD.

Contractors can either provide a product, a service, or both to the DoD. The PMO, the DCMA and the contractor must collaborate with each other frequently throughout the acquisition lifecycle. Currently, the DoD is moving to involve the contractor earlier in the acquisition lifecycle in order to take advantage of the benefits a contractor can bring to the acquisition team. Oftentimes the DoD will limit what a contractor can do because the different organizations within the DoD will think they know the best way to achieve a capability. The PMO and other organizations within the DoD will write up a statement of work for what they think is the best way to meet the new requirement. By doing this, the contractor's ability to use innovation to solve a problem is limited. By initiating collaboration with the contractor earlier in the process, the DoD can capitalize on the contractor's expertise.

Collaboration between the three organizations is critical to the continued success of defense acquisitions. The PMO, the CAO, and the contractor need to meet early and often to establish clear specifications, clear lines of communication, and a clear set of guidelines for making decisions in regards to the contract.

According to the Defense Acquisition Performance Assessment (DAPA) (2005), “both Congress and DoD senior leadership have lost confidence in the Acquisition System’s ability to determine what needs to be procured or to predict with any degree of accuracy what things will cost, when they will be delivered, or how they will perform” (p. 1). The assessment panel performed a substantial amount of research to provide a recommended acquisition structure and process with clear alignment of responsibility, authority and accountability in their report. In the report, the assessment panel makes it clear that in order to have an effective acquisition system, there needs to be stability and continuity between the different organizations, the DoD workforce, the budget process, the requirements process, the acquisition process, the industry, as well as the leadership and Congressional oversight. Currently there are fundamental disconnects between these management systems and organizations that are driven by competing values and objectives that have created government-induced instability in the acquisition programs (DAPA, 2005). These fundamental disconnects have led to the major defense systems contracts being behind schedule and over budget. All of these different entities need to collaborate with one another to understand each other’s interests and objectives within the acquisition environment in order to achieve an effective acquisition system

F. Survey Design

Survey design involved the employment and distribution of the Collaborative Capacity Survey to selected employees from each of the three participating organizations. The Collaborative Capacity Survey utilized in this study consisted of questions selected from a database created by Thomas et al. (2006) and subsequently reviewed by subject matter experts (SMEs) for relevance within a defense acquisition context (Thomas et al., 2007). Similar to the Collaborative Capacity Survey developed for the DHS community, the survey that Thomas et al. (2007) created for the defense acquisition community was designed to capture the respondent’s perceptions about various aspects of inter-organizational collaboration in relation to his or her current organization of employment.

The final Collaborative Capacity Survey for the two participating CAO offices in this study consisted of 67 items and included eleven questions related to purpose and strategy, three questions related to structure, eight questions related to lateral processes, four questions related to incentives and reward systems, and seven questions related to people. The specific survey items are presented in Chapter IV.

With the exception of eighteen questions, each survey item was structured with a 6-point response scale (e.g., 1-strongly disagree up to 6-strongly agree) from which participants specified their level of agreement.

Minor revisions were made to the questionnaire developed by Thomas et al. (2007) for the defense acquisition community and were incorporated in an effort to align questions with the CAO's specific organizational structures. For instance, the survey question, "Is your organization a Program Management Office or a Functional Office?" was revised to read "For which organization do you currently work?" Since this study focused on a portion of the acquisition triad, the question was tailored to allow for selection by organizational title. In another instance, response options for the survey question, "Which best describes your Acquisition Function or Career Field?" were expanded to reflect recent updates for available career fields. In an effort to further identify a respondent's position within the organization, the following survey items also were included in the Collaborative Capacity Survey: (a) "What is your current DAWIA Certification Level for your career field?" and (b) "For most of the programs with which you are currently involved, which phase of the acquisition process predominantly applies?"

The final Collaborative Capacity Survey for the Contractor consisted of 65 items and included eleven questions related to purpose and strategy, seven questions written to relate to structure, eight questions for lateral processes, seven questions for incentives and reward systems, and seven questions addressing personnel issues. Minor revisions to the questionnaire administered to the two CAO offices were also incorporated into the questionnaire for the Contractor in an effort to align questions with its specific organizational structures.

G. Selection of Study Participants

For our initial sampling strategy, the entire workforce of 52 personnel employed at CAO A and 67 personnel employed at CAO B were selected to participate in our research because every employee was involved in inter-organizational collaborative efforts on a routine basis. The scope of career fields assigned to CAO A and B ranged from auditing, contracting, program management and property management to facilities engineering, quality assurance, information technology, and systems engineering. Each of these career fields directly contributes to one or more of the five phases of the acquisition process that requires close government/industry integration: concept refinement, technology development, system development and demonstration, production and deployment, and operations and support.

In contrast, the sample selection process for the Contractor was developed according to (a) physical location and (b) according to whether the opportunity to collaborate with other organizations such as CAO A or CAO B was likely to occur. With the establishment of these two criteria, personnel who were physically located at an operating facility in close proximity to CAO B and who performed the quality assurance function or the contracting function were selected for survey participation.

For our initial sampling strategy for the Contractor, the target group for quality assurance consisted of 291 personnel. This target group consisted of 32 personnel who served as directors, senior managers, or managers and 259 personnel who served as individual contributors. In addition, the target group for contracts consisted of 37 personnel of whom 6 served as directors, senior managers, or managers and 31 served as individual contributors. From the target quality assurance group, 100 personnel (32 directors, senior managers, and managers and 68 individual contributors) were selected to take the survey. From the target contracts group, all 37 personnel were chosen for participation. The total number of survey participants was 137. Selected participants from the quality assurance group consisted of all 32 directors, senior managers, and managers and 68 individual

contributors. The contracts group sample consisted of all 6 directors, senior managers, and managers and 31 individual contributors.

H. Administration of the Assessment

The applicable Collaborative Capacity Surveys were administered to each of the three participating organizations through an electronic link that provided access to a web-based questionnaire. This web-link was distributed by electronic mail to each organizational point of contact (POC), who then forwarded the web-link to each of the organizational participants. Top management endorsed and distributed a cover letter to each organizational participant through electronic mail that described the purpose of this study, the importance and significance of inter-organizational collaboration, and the details of the Collaborative Capacity Survey. Additional details along with any questions or concerns about the study were communicated and addressed with each organizational POC through electronic mail.

In an effort to encourage maximum participation, a two-week window of opportunity to access the survey for completion was provided and then extended one additional week as applicable. For the two participating CAO offices, the organizational POCs distributed two electronic mail reminders to employees in one-week intervals. For the Contractor, two electronic mail reminders were also distributed.

I. Analysis Approach

A total of 47 completed surveys were received from CAO A and CAO B with a 39.5% response rate. A total of fifty completed surveys were received from the Contractor with a 36.5% response rate. To describe survey results, the mean and standard deviation for responses received to questions listed in Appendix B and C were calculated and entered into a spreadsheet. Survey items with a logged response of “I don’t know” or with no documented response were excluded from the calculations performed for each question.

For all three organizations, calculated means for negatively worded survey items were reverse-coded to allow for direct comparability with other survey questions. In order to reverse-code a mean, the mean is subtracted from 7 to get the new recoded mean. For instance, the Contractor mean calculation for the survey question "Conflicting organizational policies make collaboration difficult" was recoded from 4.6 to 2.4. Appendix B provides a comprehensive listing of the overall ratings across collaboration domains for the three participating organizations while Appendix C provides results for non-scaled items and demographic questions.

In writing about the strength of agreement or disagreement for the scales, we adopted the following convention to indicate the level of agreement or disagreement:

Table 6. Correspondence between mean values and authors' descriptors of level of agreement

Mean Range	Interpretation
5.0 to 6.0	Indication of strong agreement
4.0 to 4.9	Indication of moderate agreement
3.7 to 3.9	Indication of minimal agreement
3.4 to 3.6	Neutral rating (i.e., mid-way between agreement and disagreement)
3.1 to 3.3	Indication of minimal disagreement
2.1 to 3.0	Indication of moderate disagreement
1.0 to 2.0	Indication of strong disagreement

A mean score equal to or below 3.3 indicates a lower collaborative capacity, while a mean score equal to or higher than 3.7 indicates a higher collaborative capacity.

For each scale, we calculated the mean and standard deviation for the respondents from each organization. Because the respondents are a subset of those organizational members who were sent a survey invitation, the means calculated are necessarily approximations of the actual means for the organizations.

There is thus some error involved in estimating the means. One way to approach the problem of having a subset of respondents from a larger population is to calculate the standard error of the mean (Appendix 4). Greater values for the standard error of the mean suggest lower reliability for our estimate of the mean. When the standard error is greater, the confidence intervals are wider, indicating a greater likely range in which the actual mean falls. (This also is based on a premise of random sampling; the statistic cannot assess error resulting from the degree to which respondents who returned the surveys are more positive or more negative in their perceptions than those who did not return the survey.) The standard error of the mean decreases as the number of respondents increases and as the standard deviation decreases.

J. Summary

Chapter III began with a look at the defense acquisition environment. We described why collaboration is important throughout the acquisition of a product or service, especially between the PMO, DCMA, and the contractor. We then went into detail about the method of our study. We described the study design, the survey design, the selection of participants, administration of the assessment, and our analysis approach.

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IV. Assessment Results and Analysis

A. Introduction

The purpose of this chapter is to present assessment results and an analysis of those results from research conducted at Contract Administration Office A (CAO A), Contract Administration Office B (CAO B), and the Contractor. This chapter begins with a description of the measurement scales used in the research project. Results are based on 6-point rating scales where the number 1 represents a low rating or strong disagreement and the number 6 represents a high rating or strong agreement. In addition, frequency distribution tables for all the items organized by scale are presented in Appendix B. Next, this chapter presents assessment results for each scale along with an analysis of what those results might indicate for each of the three participating organizations. For each scale, the results of CAO A and CAO B are presented first followed by the results for the Contractor. Finally, overall assessment results and an analysis of the results are presented for each of the three participating organizations.

B. Scale Descriptions

Figure 1. Inter-organizational Collaborative Capacity Scale Values Organized by Organizational Domain
(Jansen et al., 2008)

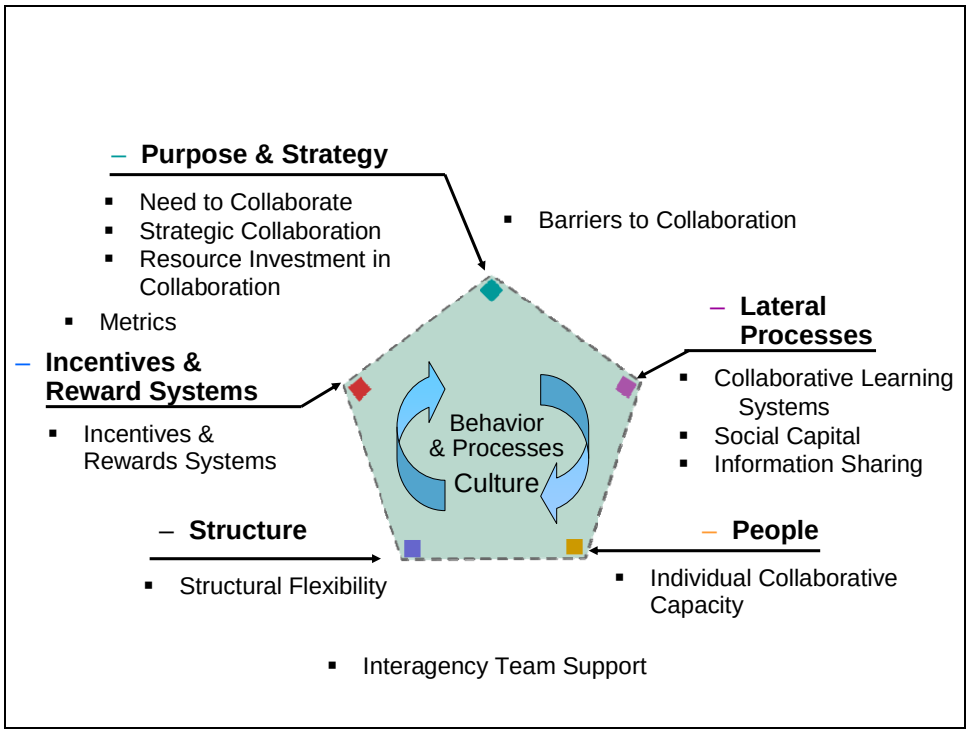

Figure 1presents the twelve measurement scales used in this research project. Three scales are assigned to the purpose and strategy domain. The *need to collaborate* scale measures survey participant perceptions about the importance and benefits of collaborating with other organizations in order to achieve shared goals. *Strategic collaboration* is the second scale and measures participant perceptions involving leadership's treatment of inter-organizational collaboration as a strategic goal. The last scale, titled resource investments in collaboration, measures how participants perceive the alignment of organizational resources (in terms of time, budget, and personnel) to the accomplishment of inter-organizational collaborative activities.

The *structural flexibility* scale pertains to the structure domain. This scale contains survey questions that ask participants to indicate perceptions about their

organization's ability to quickly form partnerships as requirements change. Survey participants also are asked to indicate whether they perceive their organization as responsive and flexible in adapting their processes to accommodate the requirements of other organizations.

The *incentives and reward systems* scale is assigned to the incentives and reward systems domain and measures how survey participants perceive the adequacy of their organization's reward systems for inter-organizational work accomplishments. Questions in this scale ask participants to indicate whether involvement in inter-organizational activities is considered important for career advancement and whether they are adequately compensated for their collaborative efforts with other organizations.

The *collaborative learning systems*, *information sharing*, and *social capital* scales are located within the lateral processes domain. Survey questions for *collaborative learning systems* ask participants to indicate whether they believe adequate resources are committed to training opportunities with other organizations and whether their organization engages in inter-organizational collaboration to identify lessons learned. The *information sharing* scale measures survey participant perceptions of their organization's ability to effectively exchange information with other organizations while the *social capital* scale measures perceptions about organizational members' ability to initiate relationship building efforts with their counterparts in other organizations.

The *individual collaborative capacity* scale is assigned to the people domain and contains questions that focus on various aspects of individual competencies to collaborate. Participants are asked to indicate whether members of their organization possess the necessary skills to collaborate effectively, are aware of other organizations' capabilities, and are able to respect the expertise of individuals from other organizations.

The scales for *metrics for collaboration*, *interagency team support*, and *barriers to collaboration* do not pertain to any one particular domain of the Collaborative Capacity Model. The *metrics for collaboration* scale measures survey participant perceptions about whether their organization has identified and established performance standards for inter-organizational work while the *interagency team support* scale asks participants to indicate whether they believe their organization recognizes and supports interagency teams as legitimate representatives of the organization. The final scale, titled *barriers to collaboration*, asks participants to indicate whether obstacles to effective inter-organizational collaboration exist.

C. Scale Results and Analysis

Table 7. Need to Collaborate: Means and Standard Deviations for CAO A, CAO B, and Contractor

Need to Collaborate	CAO A	CAO B	Contractor
Inter-organizational collaboration is a high priority for this organization.	4.6 (1.7)	4.9 (1.1)	5.2 (1.3)
My organization recognizes the importance of working with other agencies to achieve its mission.	5.0 (1.2)	4.7 (1.1)	5.3 (.9)
Members of my organization understand the benefits of collaborating with other organizations.	4.3 (1.7)	4.2 (1.2)	5.0 (.9)
Overall Scale Mean **Overall Scale Standard Deviation**	**4.5 (1.5)**	**4.6 (0.9)**	**5.2 (.8)**

Results for the three questions related to the *need to collaborate* scale are presented in Table 7. The means for CAO A and CAO B are above 4.0 for the *need to collaborate* scale, which indicates that the need to collaborate is perceived to be a high priority for both organizations. CAO A and CAO B both moderately agreed that inter-organizational collaboration was a high priority for their organization, and they both perceived that their organization recognized the importance of working with other agencies to achieve their own missions. Both organizations moderately

agreed that members of their organization understood the benefits of collaborating with other organizations.

Results show that the Contractor's overall mean for the *need to collaborate* is above 5.0, which indicates strong agreement among participants with the survey questions pertaining to this scale. Specifically, survey participants indicate strong agreement that inter-organizational collaboration was a high priority for the organization, and that the organization recognizes the importance of working with other agencies and that members of the organization understood the benefits of inter-organizational collaboration.

Table 8. Strategic Collaboration: Means and Standard Deviations for CAO A, CAO B, and Contractor

Strategic Collaboration	CAO A	CAO B	Contractor
We have clearly established goals for inter-organizational collaboration.	4.2 (1.9)	4.3 (1.3)	4.4 (1.3)
The leaders of my organization emphasize the importance of collaboration.	4.6 (1.5)	4.6 (1.0)	4.9 (1.3)
My organization is willing to address inter-organizational goals.	4.7 (1.5)	4.6 (0.9)	4.9 (1.2)
My organization's leaders meet and confer with the leaders of other agencies about mutual collaboration.	3.7 (1.8)	4.0 (1.1)	4.7 (1.1)
My organization considers the interests of others throughout the acquisition process.	4.1 (1.8)	4.0 (1.3)	4.5 (1.2)
Overall Scale Mean **Overall Scale Standard Deviation**	**4.1** **(1.6)**	**4.3** **(0.9)**	**4.7** **(1.0)**

Results for the five questions related to the *strategic collaboration* scale are presented in Table 8. These high values indicate that the leadership is perceived as having a strategy in place to collaborate with other organizations. The *strategic collaboration* scale has means above 4.0 but below 5.0 for both CAO A and CAO B, which indicates moderate agreement and a higher collaborative capacity. Both organizations had lower reported means when asked about their organization's leaders and whether they meet and confer with leaders of other organizations about

mutual collaboration. Overall, the two means indicate that the members of CAO A and CAO B only moderately agreed that their organization's leaders demonstrate a strategy to collaborate with other organizations.

Results show the Contractor's overall mean for *strategic collaboration* is between 4.0 and 5.0, which indicates moderate agreement. With an overall mean of 4.7, the results could be interpreted as indicate moderate agreement among participants that leadership emphasizes the strategic importance of inter-organizational collaboration through the establishment of clear goals and through the conduct of meetings with other agency leaders. Survey participants thus indicated that leadership was willing to address inter-organizational goals and was willing to consider the interests of others.

Table 9. Resource Investment in Collaboration: Means and Standard Deviations for CAO A, CAO B, and Contractor

Resource Investment in Collaboration	CAO A	CAO B	Contractor
My organization has committed adequate time, budget and personnel to inter-organizational collaboration.	3.5 (1.7)	3.6 (1.6)	4.2 (1.3)
My organization is willing to invest resources to accomplish inter-organizational goals.	3.6 (1.7)	3.8 (1.4)	4.3 (1.1)
My organization has assigned adequate personnel to the work required for effective inter-organizational collaboration.	3.0 (1.7)	3.1 (1.4)	3.6 (1.3)
Overall Scale Mean **Overall Scale Standard Deviation**	**3.4 (1.6)**	**3.5 (1.4)**	**4.0 (1.1)**

Results for the three questions related to the *resource investment in collaboration* scale are presented in Table 9. The results indicate both CAO A and CAO B participants reported a neutral rating because, on average, half the members agreed while the other half disagreed on these items. Adequate assignment of personnel is found for both organizations to be the weakest aspect of collaborative capacity in this scale of assigning resources. The means indicate that the members of CAO A and CAO B reported minimal disagreement that their leadership had

assigned a sufficient amount of personnel for effective inter-organizational collaboration. This item could reflect a barrier to their organization's ability to collaborate with other organizations.

With an overall mean of 4.0, the Contractor survey participants indicated moderate agreement as to whether their organization provided adequate resources to support inter-organizational collaborative efforts. However, at the survey item level participants agreed that even though their organization was willing to commit resources for the accomplishment of shared goals, they agreed less that the assignment of personnel to accomplish the work necessary for effective collaboration was adequate.

Table 10. Structural Flexibility: Means and Standard Deviations for CAO A, CAO B, and Contractor

Structural Flexibility	**CAO A**	**CAO B**	**Contractor**
My organization can quickly form or modify partnerships as requirements change.	3.5 (1.4)	3.6 (1.3)	4.3 (1.3)
My organization is flexible in adapting its processes and procedures to better fit with other organizations involved in the acquisition process.	3.6 (1.5)	3.9 (1.3)	4.4 (1.1)
My organization is responsive to the requirements of other organizations with which we work.	4.9 (1.4)	4.2 (1.2)	5.1 (1.1)
Overall Scale Mean **Overall Scale Standard Deviation**	**4.1 (1.2)**	**4.0 (1.0)**	**4.6 (.9)**

Results for the three questions related to the *structural flexibility* scale are presented in Table 10. Both CAO A and CAO B had means equal to or above 4.0, which indicates moderate agreement that their organizations are flexible in adapting their structures to better fit with other organizations when requirements change. The item from the scale that had the most agreement states that their organizations are responsive to the requirements of other organizations with which they work. The item with the least agreement dealt with the individual's organization's ability to quickly form or modify partnerships as requirements change. Considering that both

CAO A and CAO B typically deal with long-term contracts, it can be understood that it is difficult for them to quickly form or modify partnerships as requirements change.

The Contractor's results show the overall mean for the *structural flexibility* scale is 4.6, which indicates moderate agreement. Survey participants perceived their organization as responsive and flexible in terms of accommodating the requirements of other organizations. In addition, survey participants agreed that the establishment of partnerships and associated procedures provides formal support for engaging in inter-organizational collaborative activities. Survey participants were in moderate agreement that clear roles with sufficient authority to make decisions have been established for the inter-organizational collaboration.

The Contractor's results at the survey item level, responsiveness to other organizations' requirements produced the highest mean, while the speed at which partnerships were formed and the degree of flexibility within their organization to adapt procedures with other acquisition organizations produced the lowest means. While participants strongly agreed that their organization was responsive in terms of accommodating the requirements of other organizations, they were in moderate agreement as to whether it was flexible in terms of aligning procedures for a better fit and whether partnerships could be formed or modified quickly as requirements change.

Table 11. Collaborative Learning Systems: Means and Standard Deviations for CAO A, CAO B, and Contractor

Collaborative Learning Systems	CAO A	CAO B	Contractor
My organization commits adequate human and financial resources to training with other organizations.	2.7 (1.7)	3.3 (1.5)	3.4 (1.4)
My organization has strong norms for learning from other organizations.	2.9 (1.5)	3.4 (1.3)	3.6 (1.3)
My organization works with other organizations to identify lessons learned for improved collaboration.	3.3 (1.6)	3.5 (1.3)	4.1 (1.2)
Overall Scale Mean **Overall Scale Standard Deviation**	**3.0** **(1.4)**	**3.5** **(1.3)**	**3.7** **(1.2)**

Results for the three questions related to the *collaborative learning systems* scale are presented in Table 11. The overall scale mean for CAO A was a 3.0, which indicates that respondents moderately disagreed that their organization participates in collaborative learning systems. CAO B had an overall scale mean of 3.5, which indicates a neutral rating on this item. The item that received the lowest mean indicated that the respondents perceived that both of the CAO organizations do not commit adequate resources towards training with other organizations.

An overall mean of 3.7 for the Contractor's *collaborative learning systems* indicates minimal agreement among survey participants. At the survey item level, participants moderately agreed that their organization engaged with other agencies to share lessons learned for improving collaboration. However, participants were in less agreement over whether a culture of learning from other organizations exists within their organization. Further exploration reveals that the number of participants who indicated agreement (46%) with this last item and the number of those who indicated disagreement (46%) is evenly divided (See Appendix B). For the first survey item listed in Table 11, results indicate a neutral rating over the statement of whether adequate human and financial resources were committed to training with other organizations. In other words, about half of the respondents disagreed with this statement while the other half agreed.

In summary, these results suggest that while the Contractor strived to improve its collaborative efforts through shared lessons learned, participants questioned the adequacy of resources allotted for inter-organizational training opportunities. It should be noted that the standard deviation for this survey item is the highest recorded in the *collaborative learning systems* scale, which indicates more variability exists in the range of responses. Further exploration reveals that the number of participants who indicated agreement (44%) and the number who indicated disagreement (46%) is almost evenly divided (See Appendix B).

Table 12. Information Sharing: Means and Standard Deviations for CAO A, CAO B, and Contractor

Information Sharing	CAO A	CAO B	Contractor
My organization has strong norms that encourage sharing information with other organizations.	3.9 (1.6)	3.9 (1.4)	4.1 (1.4)
My organization provides other agencies adequate access to information we have that is relevant to their work.	3.9 (1.6)	3.8 (1.1)	4.2 (1.3)
Members of my organization share information with other organizations.	4.4 (1.5)	4.0 (1.2)	4.5 (1.2)
Overall Scale Mean **Overall Scale Standard Deviation**	**4.0** **(1.4)**	**3.9** **(1.1)**	**4.3** **(1.1)**

Results for the three questions related to the *information sharing* scale are presented in Table 12. Both CAO A and CAO B had high results when asked if their organization shares information with other organizations. However, when asked if their organization provides other organizations adequate access to information that is relevant to their work, both organizations reported lower means. This can be interpreted as both CAO A and CAO B share information with the organizations that they work with; however, they do not provide adequate access to all the available information, possibly because of distrust or because they feel they will give up some of their power if they release all available information. This presumption for CAO B is supported by an item in the *barriers to collaboration* scale that indicated minimal agreement when members were asked if their organization tended to be suspicious and distrustful of their counterparts in other organizations.

The Contractor survey participants indicated moderate agreement with the organization's willingness and ability to share information. At the survey item level, strong norms for encouraging information sharing behaviors produced the lowest mean (4.1) and the highest standard deviation (1.4) for this scale but even these results could be interpreted to indicate that the Contractor's culture encourages information sharing with other organizations.

Table 13. Social Capital: Means and Standard Deviations for CAO A, CAO B, and Contractor

Social Capital	CAO A	CAO B	Contractor
Our employees know who to contact in other agencies for information or decisions.	4.1 (1.5)	4.0 (1.1)	4.0 (1.5)
Members of my organization take the initiative to build relationships with their counterparts in other organizations.	4.1 (1.6)	4.0 (1.0)	4.7 (1.1)
Overall Scale Mean **Overall Scale Standard Deviation**	**4.1** **(1.5)**	**4.0** **(1.0)**	**4.4** **(1.2)**

Results for the two questions related to the *social capital* scale are presented in Table 13. CAO A and CAO B had means of either 4.0 or 4.1 for all the item means and for the overall scale means, which indicates moderate agreement for social capital or interpersonal networks. The results indicate that both organizations take the initiative to build relationships with their counterparts in other organizations, and they know who to contact in other organizations for information or decisions.

Results show the Contractor's overall mean for the *social capital* scale is 4.4, which indicate moderate agreement among participants. Specifically, survey participants believe that organizational members initiate relationship building efforts and knew with whom to communicate for obtaining information. The results suggest that the establishment of interpersonal networks facilitates interaction between those engaged in inter-organizational collaboration.

Table 14. Incentives and Reward Systems: Means and Standard Deviations for CAO A, CAO B, and Contractor

Incentives and Reward Systems	CAO A	CAO B	Contractor
Engaging in inter-organizational activities at work is important to career advancement in my organization.	4.5 (1.5)	4.2 (1.6)	4.8 (1.0)
My organization rewards employees for investing time and energy in building collaborative relationships.	3.3 (1.6)	4.0 (1.4)	4.0 (1.5)
My organization rewards members for their inter-organizational collaborative activities.	3.2 (1.5)	3.6 (1.3)	3.6 (1.6)
Collaborative talents and achievements are considered when people are reviewed for promotion.	3.5 (1.8)	3.5 (1.5)	3.8 (1.6)
Overall Scale Mean **Overall Scale Standard Deviation**	**3.7 (1.4)**	**4.0 (1.2)**	**4.1 (1.1)**

Results for the four questions related to the *incentives and reward systems* scale are presented in Table 14. CAO A shows a scale mean of 3.7, which indicates minimal agreement, while CAO B shows a scale mean of 4.0, which indicates moderate agreement that their organizations have incentive and reward systems in relation to inter-organizational collaboration. Both organizations had higher reported means when participants were asked if engaging in inter-organizational activities at work was important to career advancement in their organizations. On the other hand, both organizations had a lower mean when asked about their organization reviewing collaborative talents and achievements for promotions. Another item that received a lower reported mean was the item about the individual's perception of their organization rewarding members for their inter-organizational collaborative activities. An overall examination of the item level results for this scale suggests that members of both organizations perceive that engaging in inter-organizational activities at work is important to their career; however, neither organization is perceived as making it a priority to reward their members for their collaborative activities.

Results for the Contractor show that the overall mean for the *incentives and reward systems* scale indicates moderate agreement. Participants indicated that involvement in inter-organizational work was important to professional advancement and efforts to build collaborative relationships were rewarded. However, participants indicated much less agreement in terms of whether collaborative achievements were considered during promotion reviews. Participants also indicated a fairly even distribution of agreement and disagreement (with an overall "neutral" mean) as to whether organizational members are rewarded for inter-organizational activities. Further exploration also revealed that 24% of the survey participants indicated they didn't know if collaborative achievements were considered during promotion reviews. These results suggest that many survey participants perceived that the organization's internal rewards systems for collaborative accomplishments were not fully aligned with the perceived importance of these accomplishments towards career advancement.

Table 15. Individual Collaborative Capacity: Means and Standard Deviations for CAO A, CAO B, and Contractor

Individual Collaborative Capacity	CAO A	CAO B	Contractor
Our employees have the collaborative skills (e.g., conflict management, team process skills) needed to work effectively with other agencies.	3.6 (1.8)	3.6 (1.4)	4.1 (1.2)
Members of my organization are aware of the capabilities of other organizations with which we work.	3.9 (1.4)	3.7 (1.2)	4.2 (1.2)
Members of my organization respect the expertise of those in other organizations with whom we work.	4.7 (0.9)	4.1 (1.2)	4.7 (1.1)
Members of my organization understand how our work relates to the work of the other organizations with whom we need to collaborate.	3.8 (1.6)	4.2 (0.9)	4.6 (1.2)
Members of my organization are able to appreciate another organization's perspective on a problem or course of action.	3.8 (1.5)	3.8 (1.1)	4.5 (1.1)
Members of my organization seek input from other organizations.	4.0 (1.8)	3.7 (1.3)	4.6 (1.2)
Members of my organization are willing to engage in a shared decision making process with other organizations when addressing inter-organizational issues.	4.3 (1.5)	4.1 (1.2)	4.6 (1.2)
Overall Scale Mean **Overall Scale Standard Deviation**	**4.0** **(1.2)**	**3.9** **(1.0)**	**4.5** **(.9)**

Results for the seven questions related to the *individual collaborative capacity* scale are presented in Table 15. CAO A and CAO B both had similar results for the *individual collaborative capacity* scale. Both organizations reported higher means for the item that dealt with their organization's personnel respecting the expertise of those in other organizations. Another item mean that was higher than other items within the scale dealt with the members of their organization being willing to engage in a shared decision-making process with other organizations when addressing inter-organizational issues. On the other hand, the item that received the lowest reported means within the scale dealt with the perception of whether members of the organization possess the collaborative skills necessary to work effectively with other

agencies. An overall analysis of the *individual collaborative capacity* scale indicates that both organizations have respect for the other organizations they work with, and they are willing to participate in a shared decision-making process; however, many do not feel as strongly that they have the collaborative skills needed in order to work effectively with other organizations.

The Contractor survey participants indicated moderate agreement with an overall mean of 4.5 for *individual collaborative capacity*. In other words, survey participants perceived that members of their organization possess the capability to engage in inter-organizational collaboration and are able to appreciate different approaches for solving problems. In addition, participants perceived that members of their organization are willing to share decision making with members of other organizations to address inter-organizational issues. At the survey item level, means ranged from 4.1 to 4.7, which indicates that survey respondents feel organizational members possess a variety of competencies to collaborate that allow them to go beyond the traditional boundaries of working with other organizations.

Table 16. Metrics for Collaboration: Means and Standard Deviations for CAO A, CAO B, and Contractor

Metrics for Collaboration	CAO A	CAO B	Contractor
My organization has identified measurement criteria or performance metrics to evaluate inter-organizational collaboration efforts.	3.8 (1.7)	3.6 (1.4)	3.0 (1.4)
My organization has established clear performance standards regarding inter-organizational work.	3.4 (1.7)	3.6 (1.3)	3.7 (1.3)
Overall Scale Mean **Overall Scale Standard Deviation**	**3.6 (1.6)**	**3.6 (1.3)**	**3.4 (1.2)**

Results for the two questions related to the *metrics for collaboration* scale are presented in Table 16. CAO A and CAO B both had means of 3.6 for the *metrics to collaboration* scale, which indicates a neutral rating. CAO A reported minimal agreement that their organization had identified measurement criteria or performance metrics to evaluate inter-organizational collaboration efforts but the

mean was closer to the midpoint between agreement and disagreement regarding whether their organization has established clear performance standards regarding inter-organization work. CAO B reported a 3.6 mean for both items within the scale. Reported scale means of 3.6 indicates a neutral rating (i.e., mid-way between agreement and disagreement); however, most organizations typically have a difficult time identifying or establishing measurement criteria and performance standards to assess inter-organizational collaboration efforts.

With an overall mean of 3.4 for the *metrics for collaboration* scale, the Contractor survey participants indicated a rating that was midway between agreement and disagreement involving the identification and establishment of feedback mechanisms for measuring the effectiveness of collaborative efforts. Further exploration revealed that while 56% of the survey participants indicated disagreement, 18% indicated they did not know if their organization had identified measurement criteria to evaluate inter-organizational work (See Appendix B). These percentages could indicate that metrics for collaboration were in place but not considered effective or not completely developed. It also could be stated that some survey participants may not have been aware of what metrics were in place.

Table 17. Interagency Team Support: Means and Standard Deviations for CAO A, CAO B, and Contractor

Interagency Team Support	CAO A	CAO B	Contractor
My organization gives members of inter-organizational teams adequate authority to speak on behalf of the organization.	4.1 (1.9)	3.8 (1.1)	4.5 (1.1)
My organization supports the decisions and recommendations of the inter-organizational team.	4.0 (1.3)	3.9 (1.2)	4.4 (1.0)
Overall Scale Mean **Overall Scale Standard Deviation**	**4.1 (1.5)**	**3.8 (1.0)**	**4.5 (.9)**

Results for the two questions related to the *interagency team support* scale are presented in Table 17. CAO A reported a mean of 4.1, which indicates moderate agreement, while CAO B reported a 3.8 mean, which indicates minimal

agreement for the *interagency team support* scale. CAO A moderately agreed that their organization gives members of inter-organizational teams adequate authority to speak on behalf of the organization and that their organization supports the decisions and recommendations of the inter-organizational team. CAO B only indicated minimal agreement on these two items.

Results show the Contractor participants indicated moderate agreement. With an overall mean of 4.5, survey participants agreed that their organization supported the establishment of interagency teams as a legitimate representative of the organization. In addition, survey participants perceived that these teams were provided sufficient authority to make decisions and that their organizations supported recommendations provided by the interagency teams.

Table 18. Barriers to Collaboration: Means and Standard Deviations for CAO A, CAO B, and Contractor

Barriers to Collaboration	CAO A	CAO B	Contractor
Conflicting organizational policies make collaboration difficult.	3.1** (1.6)	2.8** (1.2)	2.4** (1.4)
A history of inter-organizational conflict affects our inter-organizational capability.	3.5** (1.8)	2.9** (1.3)	3.1** (1.3)
Members of my organization tend to be suspicious and distrustful of their counterparts in other organizations.	3.4** (1.7)	3.1** (1.2)	4.2** (1.6)
I face incompatible requirements or requests when working with other organizations.	4.0** (1.4)	3.3** (0.8)	3.7** (1.5)
Overall Scale Mean **Overall Scale Standard Deviation**	**3.4** **(1.3)**	**3.0** **(1.8)**	**3.4** **(1.1)**

** Means recoded to allow direct comparability. The only scale for which a higher mean represents an absence of barriers

Results for the four questions related to the *barriers to collaboration* scale are presented in Table 18. The mean for each negatively worded survey question was reverse coded for direct comparability with the other "positively worded" items in the rest of the survey. When recoded, a higher mean potentially indicates an absence of barriers. CAO A reported a 3.4 mean which indicates a rating that is between agreement and disagreement. CAO B reported a mean of 3.0 which indicates

moderate agreement that there are barriers to collaboration. The item with the lowest mean from both organizations was conflicting organizational policies make collaboration difficult. Another item that received a lower mean from both organizations asked individuals if they perceived members of their organization being suspicious or distrustful of their counterparts in other organizations. Members of both organizations perceived that there are barriers to collaboration.

The Contractor's overall mean for barriers indicated a rating midway between agreement and disagreement for this scale. At the survey item level, the means for survey questions involving conflicting organizational policies and historical inter-organizational conflict suggest that survey participants perceived organizational policies and historical inter-organizational conflict as impediments to the organization's capacity to collaborate. However, the means for survey questions involving distrust and incompatible requirements could be interpreted to mean that these particular barriers did not exist as much in the organization. Specifically, participants trusted their counterparts in other organizations and did not always encounter conflicting requests when working with other organizations. In summary, it could be stated that while survey participants perceived that some barriers impeded inter-organizational collaboration, other barriers did not.

D. Overall Results and Analysis

Table 19. Scale Means and Standard Deviations for CAO A, CAO B, and Contractor

Scale	CAO A	CAO B	Contractor
Need to Collaborate	4.5 (1.5)	4.6 (0.9)	5.2 (.8)
Strategic Collaboration	4.1 (1.6)	4.3 (0.9)	4.7 (1.0)
Resource Investments in Collaboration	3.4 (1.6)	3.5 (1.4)	4.0 (1.1)
Structural Flexibility	4.1 (1.2)	4.0 (0.9)	4.6 (.9)
Incentives and Reward Systems	3.7 (1.4)	4.0 (1.2)	4.1 (1.1)
Collaborative Learning Systems	3.0 (1.4)	3.5 (1.3)	3.7 (1.2)
Information Sharing	4.0 (1.4)	3.9 (1.1)	4.3 (1.1)
Social Capital	4.0 (1.5)	4.0 (1.0)	4.4 (1.2)
Individual Collaborative Capacity	4.0 (1.2)	3.9 (1.0)	4.5 (.9)
Metrics for Collaboration	3.6 (1.6)	3.6 (1.3)	3.4 (1.2)
Interagency Team Support	4.1 (1.5)	3.8 (1.0)	4.5 (.9)
Barriers	3.4* (1.3)	3.0* (0.8)	3.4* (1.1)

* Means recoded to allow direct comparability. The only scale for which a higher mean represents an absence of barriers

CAO A and CAO B both had very similar results. These results are to be expected because both organizations have a similar purpose and perform the same job functions.

The *need to collaborate* scale had the highest mean out of all twelve scales for both CAO A and CAO B. The *strategic collaboration* scale reported one of the next higher means out of all the scales for CAO A and CAO B. Resource investments in collaboration did not receive the same level of agreement as the first two scales within the purpose and strategy domain. The results to this scale were lower than every other scale for CAO A and one of the lowest scale means for CAO B. One of the main reasons why the means for the *resource investment in*

collaboration scale for both CAO A and CAO B is lower than the other two scales that make up the purpose and strategy domain is because of the low reported means for the item that ask the individual what their perception is of their organization assigning adequate personnel to the work required for effective inter-organizational collaboration.

The overall scale results presented in Table 19 indicate strong to moderate agreement among the Contractor survey participants in all but three areas: *collaborative learning systems*, *metrics for collaboration* and *barriers to collaboration*. These results suggest that the Contractor possessed high collaborative capacity in most areas even though some barriers to inter-organizational collaboration did exist. In addition, participant perceptions that performance standards and evaluation criteria were either not identified or established for inter-organizational work could indicate that metrics for collaboration were in place but not considered effective or that these metrics were not completely developed. The results suggest that survey participants were not clear about what metrics were in place and what they were supposed to measure.

In summary, eight of twelve scales for CAO A and CAO B produced an overall mean equal to or above 3.7, which suggests that CAO A and CAO B both have a relatively high collaborative capacity in these areas of measurement. Likewise, the Contractor had ten of the twelve scales report an overall mean equal to or above 3.7, which suggests that the Contractor has a relatively high collaborative capacity in these areas of measurement. However, the Contractor had a higher mean for ten of the twelve scales than both CAO A and CAO B, which suggests a higher collaborative capacity than CAO A and CAO B. In other words, the Contractor shows fairly consistent higher means than the CAO organizations. Appendix D provides a better sense of the differences between the various means.

Even though the previous paragraph makes comparisons between the three participating organizations' scale means, the differences observed between the means could be attributed to: 1) the organizations are structured differently and

perform different roles within the defense acquisition environment, and 2) different sampling procedures were employed to select survey participants from each organization. However, Appendix D illustrates how comparisons could be performed among organizations or among units within an organization.

E. Summary

This chapter presented assessment results and an analysis of those results from research conducted at Contract Administration Office A (CAO A), Contract Administration Office B (CAO B), and the Contractor. This chapter opened with a description of the measurement scales used during this research project. Next, this chapter presented assessment results for each measurement scale along with an analysis of what those results might indicate for each of the three participating organizations. Finally, overall assessment results and an analysis of those results were presented for each of the three participating organizations.

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V. Conclusions and Recommendations

A. Introduction

This chapter summarizes the findings of our research and is organized around the project's two central questions: 1) What is the effectiveness of the Collaborative Capacity Survey (Thomas et al., 2007) in measuring the collaborative capacity of defense acquisition organizations? 2) What are the perceptions of the survey respondents from CAO A, CAO B, and the Contractor pertaining to their organization's collaborative capacity? This chapter also presents our recommendations and suggestions for further research.

B. Research Conclusions

The goal of our study is to provide the participating organizations another tool for gaining insight into their operations as they interact with each other to achieve their shared mission. The Collaborative Capacity Survey (Thomas et al., 2006, 2008; Hocevar et al., 2004, 2006) appears to show promise of providing an effective method for measuring and assessing collaborative capacity in an inter-organizational context. Specifically, this tool was originally developed for the Defense Homeland Security environment and then tailored for the defense acquisition environment. We administered this survey to three defense acquisition organizations, analyzed the results, and presented our findings to the participating organizations.

Our next goal was to measure the collaborative capacity of three different organizations within the acquisition field. The perceptions of the respondents from the three organizations in our study appeared to align with Bardach's Interagency Collaborative Capacity (ICC) platforms (2001). As discussed in Chapter II, Bardach's ICC model proposed that an organization required the development of certain platforms (leading) such as creative opportunity, implementation networks, intellectual capital, and trust before it progressed towards the development of other capacity platforms (lagging) such as an advocacy group, communication networks,

and continuous learning. Results from the three organizations in our study all appeared to show the same leading and lagging factors that Bardach had proposed. Specifically, all three organizations reported high means for the scales of *need to collaborate*, *strategic collaboration*, *social capital*, and *structural flexibility*. These scales could be considered as leading factors that provide the foundation for developing a higher level of collaborative capacity. The scales that showed consistently lower means were the scales of *barriers to collaboration*, *collaborative learning systems*, *resource investments in collaboration*, and *metrics*. These scales could be considered as lagging factors that slow or even impede these organizations' capacity to collaborate.

C. Recommendations

Given a response rate of approximately 40%, it should be noted that these results may not be indicative of overall perceptions actually held by the organizational members. Thus, leadership from each of the three participating organizations may or may not decide that these results are valid and warrant changes for improved inter-organizational collaboration. If leadership at CAO A, CAO B, and the Contractor perceive the individuals who participated in the survey as representative of their organization, they should focus their attention on the scales where they received a lower reported score. All three organizations should examine the items that received the lower means within the lagging scales and decide if this is an area upon which they can improve. For instance, if an organization strives to achieve a higher rating for the metrics scale, they can review whether they have established clear performance standards regarding inter-organizational work. There are some survey items that certain organizations, especially Federal organizations such as CAO A and CAO B, may not have the opportunity to change due to existing laws and regulations. For example, CAO A and CAO B may have little influence over improving perceptions to survey questions such as "My organization can quickly form or modify partnerships as requirements change" because the policies regarding this item are likely formulated at a much higher level in the organization.

If CAO A, CAO B, and the Contractor leadership do not perceive a 40% response rate as significant enough to provide a good representation of their organization, we recommend that each organization re-take the survey when leadership determines a more appropriate time at which more employees could participate. We also recommend that surveys should be supplemented with interviews to gain deeper insights into the members' perceptions on certain issues. Interviews are likely to provide the researcher an opportunity to listen to the stories as a way to obtain a better understanding of the organization's collaborative capacity.

D. Suggestions for Further Research

There is a need for further collaborative capacity research in the defense acquisition environment. The first research project that we recommend is the measurement and assessment of collaborative capacity involving the Program Management Office, the Contract Administrative Office, and a prime defense contractor mutually associated with a major defense acquisition program. Only employees who are assigned to this program would be involved in the study. In addition to survey participation, follow-up interviews should be performed in which selected program participants discuss in more detail their perceptions of collaborative capacity in relation to their acquisition program.

Within the defense acquisition environment, "Big A" acquisition involves the integration of the processes for requirements determination, planning, programming, budgeting, and "Little a" acquisition. This approach was a major shift in strategy for the DoD's acquisition community for its focus previously resided solely with the acquisition process (know as the "Little a" acquisition process). The second research project that we recommend is the measurement of and the assessment of collaborative capacity within organizations responsible for this integration. While there appears to be quite a bit of discussion about the need to improve inter-organizational collaboration in terms of "Little a" acquisition and even in terms of "Big

A" acquisition, minimal research has been accomplished to assess the collaborative capacity of these organizations.

A third research project that we recommend is assessing the collaborative capacity of organizations that engage in interagency acquisition. Interagency acquisition is a process in which a DoD organization uses a non-DoD agency to acquire supplies and services. Essentially, the DoD organization sends funding to a non-DoD agency for an item or service, and this assisting agency then awards the purchase to a contractor for fulfillment of the requirement. The effectiveness of this process involves considerable inter-organizational collaboration because of differences in organizational cultures and because of the need to establish roles and responsibilities early in the procurement action. As of 2006, GAO has listed interagency acquisition as a high-risk area of contract management (2006). Reasons cited for designating interagency acquisition as high risk include poor communications, competing priorities, lack of contracting expertise, vague requirements, and lack of knowledge involving the other organizations' processes. Conducting research that assesses collaborative capacity within these organizations' environment could help to identify opportunities for improving collaborative capacity.

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Appendix A. Survey Cover Letter

Subject: Survey Participation for Naval Postgraduate School Student MBA Project

(Name of Participating Organization)

We have been selected to participate in a survey on factors that affect inter-organizational collaboration. (Name of organizational point of contact) is in full support of this survey and understands the necessity of collaboration. (Name of organizational point of contact) along with the leadership of his organization, are interested in the results of the survey in order to identify ways to improve how well we collaborate with other organizations.

I highly encourage you to take part in this opportunity. The research is being conducted by two MBA Contract Management students at the Naval Postgraduate School in Monterey, California--Navy LCDR Michele LaPorte and Air Force Captain Jeremiah Kirschman--as their master's degree thesis. The survey is web-based and is designed to be completed in 20 minutes. More importantly, you will need to complete this survey in one session because it is not possible to stop the survey, close it, and re-enter while retaining prior responses. You will be given time during your work day to complete the survey. Due to the limited time required to complete this survey, normal charging is appropriate.

The survey results are completely anonymous and your participation is voluntary. LCDR LaPorte and Captain Kirschman will combine all the data to identify factors enabling collaboration and factors impeding it.

Please access the survey web link provided below and complete the survey by **November 3, 2008.**

(survey web link)

Thank you very much for your time in providing your perspective on this important topic. The survey results will be very useful in improving organizational performance.

(Name of organizational point of contact)
(Name of participating organization)

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Appendix B. Inter-organizational Collaborative Capacity Scale Values

A. Contract Administration Office A (N=20)

Component - Factor	Mean	% Agree	% Disagree
Strategy and Purpose – Need to Collaborate	**4.5 (1.5)**		
5. Interorganizational collaboration is a high priority for this organization.*	4.6 (1.7)	70	25
13. My organization recognizes the importance of working with other agencies to achieve its mission.*	5.0 (1.2)	80	10
40. Members of my organization understand the benefits of collaborating with other organizations.*	4.3 (1.7)	70	30
Strategy and Purpose – Strategic Collaboration	**4.1 (1.6)**		
6. We have clearly established goals for interorganizational collaboration.*	4.2 (1.9)	65	35
9. The leaders of my organization emphasize the importance of collaboration.*	4.6 (1.5)	70	25
11. My organization is willing to address interorganizational goals.*	4.7 (1.5)	70	20
42. My organization's leaders meet and confer with the leaders of other agencies about mutual collaboration.*	3.7 (1.8)	55	25
45. My organization considers the interests of others throughout the acquisition process.*	4.1 (1.8)	70	30
Strategy and Purpose – Resource Investment in Collaboration	**3.4 (1.6)**		
7. My organization has committed adequate time, budget and personnel to interorganizational collaboration.*	3.5 (1.7)	60	35
12. My organization is willing to invest resources to accomplish interorganizational goals.*	3.6 (1.7)	50	40
18. My organization has assigned adequate personnel to the work required for effective interorganizational collaboration.*	3.0 (1.7)	35	50
Structure – Structural Flexibility	**4.1 (1.2)**		
8. My organization can quickly form or modify partnerships as requirements change.*	3.5 (1.4)	50	45
14. My organization is flexible in adapting its processes and procedures to better fit with other organizations involved in the acquisition process.*	3.6 (1.5)	50	45

49. My organization is responsive to the requirements of other organizations with which we work.**	4.9 (1.4)	85	15
Lateral Processes – Collaborative Learning System	**3.0 (1.4)**		
28. My organization commits adequate human and financial resources to training with other organizations.*	2.7 (1.7)	35	55
30. My organization has strong norms for learning from other organizations.*	2.9 (1.5)	40	55
32. My organization works with other organizations to identify lessons learned for improved collaboration.*	3.3 (1.6)	50	50
Lateral Processes – Information Sharing	**4.0 (1.4)**		
24. My organization has strong norms that encourage sharing information with other organizations.*	3.9 (1.6)	60	35
29. My organization provides other agencies adequate access to information we have that is relevant to their work.*	3.9 (1.6)	70	25
44. Members of my organization share information with other organizations.*	4.4 (1.5)	75	25
Lateral Processes – Social Capital	**4.1 (1.5)**		
26. Our employees know who to contact in other agencies for information or decisions.*	4.1 (1.5)	65	25
27. Members of my organization take the initiative to build relationships with their counterparts in other organizations.*	4.1 (1.6)	65	30
Incentives and Reward Systems – Incentives and Reward Systems	**3.7 (1.4)**		
20. Engaging in interorganizational activities at work is important to career advancement in my organization.*	4.5 (1.5)	85	15
21. My organization rewards employees for investing time and energy in building collaborative relationships.*	3.3 (1.6)	45	40
46. My organization rewards members for their interorganizational collaborative activities.*	3.2 (1.5)	45	55
47. Collaborative talents and achievements are considered when people are reviewed for promotion.*	3.5 (1.8)	35	50
People – Individual Collaborative Capacities	**4.0 (1.2)**		
34. Our employees have the collaborative skills (e.g., conflict management, team process skills) needed to work effectively with other agencies.*	3.6 (1.8)	55	40
35. Members of my organization are aware of the capabilities	3.9	60	35

of other organizations with which we work.*	(1.4)		
36. Members of my organization respect the expertise of those in other organizations with whom we work.*	4.7 (0.9)	95	0
37. Members of my organization understand how our work relates to the work of the other organizations with whom we need to collaborate.*	3.8 (1.6)	55	45
39. Members of my organization are able to appreciate another organization's perspective on a problem or course of action.*	3.8 (1.5)	75	25
43. Members of my organization seek input from other organizations.*	4.0 (1.8)	70	25
54. Members of my organization are willing to engage in a shared decision making process with other organizations when addressing interorganizational issues.*	4.3 (1.5)	80	20
Metrics for Collaboration	**3.6 (1.6)**		
17. My organization has identified measurement criteria or performance metrics to evaluate interorganizational collaboration efforts.*	3.8 (1.7)	60	30
23. My organization has established clear performance standards regarding interorganizational work.*	3.4 (1.7)	45	45
Interagency Team Support	**4.1 (1.5)**		
52. My organization gives members of interorganizational teams adequate authority to speak on behalf of the organization.*	4.1 (1.9)	60	25
53. My organization supports the decisions and recommendations of the interorganizational team.*	4.0 (1.3)	60	25
Barriers	**3.4 (1.3)**		
15. Conflicting organizational policies make collaboration difficult.*	3.1*** (1.6)	60	30
19. A history of interorganizational conflict affects our interorganizational capability.*	3.5*** (1.8)	50	35
38. Members of my organization tend to be suspicious and distrustful of their counterparts in other organizations.*	3.4*** (1.7)	55	45
50. I face incompatible requirements or requests when working with other organizations.**	4.0*** (1.4)	45	45

"% Agree" was the percent of people who selected 4, 5, or 6 on the Likert Scale.
"% Disagree" was the percent of people who selected 1, 2, or 3 on the Likert Scale.
When the percent total for an item is less than 100%, this is the result of "Don't know" or a non-response.

* 6 point scale; 1-Strongly Disagree to 6-Strongly Agree

** 6 point scale; 1-Almost Never to 6-Almost Always

***Recoded value to allow direct comparability

B. Contract Administration Office B (N=27)

Domain - Scale	Mean	% Agree	% Disagree
Strategy and Purpose – Need to Collaborate	**4.6 (.9)**		
5. Interorganizational collaboration is a high priority for this organization.*	4.9 (1.1)	89	11
13. My organization recognizes the importance of working with other agencies to achieve its mission.*	4.6 (1.1)	82	18
40. Members of my organization understand the benefits of collaborating with other organizations.*	4.2 (1.2)	68	29
Strategy and Purpose – Strategic Collaboration	**4.3 (.9)**		
6. We have clearly established goals for interorganizational collaboration.*	4.3 (1.3)	71	21
9. The leaders of my organization emphasize the importance of collaboration.*	4.6 (1.0)	82	14
11. My organization is willing to address interorganizational goals.*	4.6 (.9)	79	11
42. My organization's leaders meet and confer with the leaders of other agencies about mutual collaboration.*	4.0 (1.1)	61	21
45. My organization considers the interests of others throughout the acquisition process.*	4.0 (1.3)	54	36
Strategy and Purpose – Resource Investment in Collaboration	**3.5 (1.4)**		
7. My organization has committed adequate time, budget and personnel to interorganizational collaboration.*	3.6 (1.6)	43	46
12. My organization is willing to invest resources to accomplish interorganizational goals.*	3.8 (1.4)	50	36
18. My organization has assigned adequate personnel to the work required for effective interorganizational collaboration.*	3.1 (1.4)	36	50
Structure – Structural Flexibility	**4.0 (.93)**		
8. My organization can quickly form or modify partnerships as requirements change.*	3.6 (1.3)	43	43
14. My organization is flexible in adapting its processes and procedures to better fit with other organizations involved in the acquisition process.*	3.9 (1.3)	54	36
49. My organization is responsive to the requirements of other organizations with which we work.**	4.2 (1.2)	68	25
Lateral Processes – Collaborative Learning Systems	**3.5 (1.3)**		
28. My organization commits adequate human and financial resources to training with other organizations.*	3.3 (1.5)	43	50

30. My organization has strong norms for learning from other organizations.*	3.4 (1.3)	43	46
32. My organization works with other organizations to identify lessons learned for improved collaboration.*	3.5 (1.3)	39	46
Lateral Processes – Information Sharing	**4.0 (1.1)**		
24. My organization has strong norms that encourage sharing information with other organizations.*	3.9 (1.4)	64	29
29. My organization provides other agencies adequate access to information we have that is relevant to their work.*	3.8 (1.1)	54	36
44. Members of my organization share information with other organizations.*	4.0 (1.2)	64	21
Lateral Processes – Social Capital	**4.0 (.98)**		
26. Our employees know who to contact in other agencies for information or decisions.*	4.0 (1.1)	64	32
27. Members of my organization take the initiative to build relationships with their counterparts in other organizations.*	4.0 (1.0)	64	29
Incentives and Reward Systems – Incentives and Reward Systems	**4.0 (1.2)**		
20. Engaging in interorganizational activities at work is important to career advancement in my organization.*	4.2 (1.6)	61	29
21. My organization rewards employees for investing time and energy in building collaborative relationships.*	4.0 (1.4)	61	29
46. My organization rewards members for their interorganizational collaborative activities.*	3.6 (1.3)	39	39
47. Collaborative talents and achievements are considered when people are reviewed for promotion.*	3.5 (1.5)	43	36
People – Individual Collaborative Capacities	**3.9 (1.0)**		
34. Our employees have the collaborative skills (e.g., conflict management, team process skills) needed to work effectively with other agencies.*	3.6 (1.4)	46	43
35. Members of my organization are aware of the capabilities of other organizations with which we work.*	3.7 (1.2)	54	39
36. Members of my organization respect the expertise of those in other organizations with whom we work.*	4.1 (1.2)	61	32
37. Members of my organization understand how our work relates to the work of the other organizations with whom we need to collaborate.*	4.2 (.9)	75	21
39. Members of my organization are able to appreciate another organization's perspective on a problem or course of action.*	3.8 (1.1)	54	39
43. Members of my organization seek input from other organizations.*	3.7 (1.3)	54	39
54. Members of my organization are willing to engage in a shared decision making process with other organizations when	4.1 (1.2)	61	25

addressing interorganizational issues.*			
Metrics for Collaboration	**3.6 (1.3)**		
17. My organization has identified measurement criteria or performance metrics to evaluate interorganizational collaboration efforts.*	3.6 (1.4)	57	32
23. My organization has established clear performance standards regarding interorganizational work.*	3.6 (1.3)	61	29
Interagency Team Support	**3.8 (1.0)**		
52. My organization gives members of interorganizational teams adequate authority to speak on behalf of the organization.*	3.8 (1.1)	54	21
53. My organization supports the decisions and recommendations of the interorganizational team.*	3.9 (1.2)	50	25
Barriers	**3.0*** (.8)**		
15. Conflicting organizational policies make collaboration difficult.*	2.8*** (1.2)	57	36
19. A history of interorganizational conflict affects our interorganizational capability.*	2.9*** (1.3)	61	21
38. Members of my organization tend to be suspicious and distrustful of their counterparts in other organizations.*	3.1*** (1.2)	57	36
50. I face incompatible requirements or requests when working with other organizations.**	3.3*** (.8)	61	32

"% Agree" was the percent of people who selected 4, 5, or 6 on the Likert Scale.
"% Disagree" was the percent of people who selected 1, 2, or 3 on the Likert Scale.
When the percent total for an item is less than 100%, this is the result of "Don't know" or a non-response.

* 6 point scale; 1-Strongly Disagree to 6-Strongly Agree

** 6 point scale; 1-Almost Never to 6-Almost Always

***Recoded value to allow direct comparability

C. Contractor (N=50)

Domain - Scale	Mean	% Agree	% Disagree
Strategy and Purpose – Need to Collaborate	**5.2 (.8)**		
4. Interorganizational collaboration is a high priority for this organization.*	5.2 (1.3)	86	10
12. My organization recognizes the importance of working with other agencies to achieve its mission.*	5.3 (.9)	94	6
39. Members of my organization understand the benefits of collaborating with other organizations.*	5.0 (.9)	96	4
Strategy and Purpose – Strategic Collaboration	**4.7 (1.0)**		
5. We have clearly established goals for interorganizational collaboration.*	4.4 (1.3)	74	24
8. The leaders of my organization emphasize the importance of collaboration.*	4.9 (1.3)	84	14
10. My organization is willing to address interorganizational goals.*	4.9 (1.2)	88	8
41. My organization's leaders meet and confer with the leaders of other agencies about mutual collaboration.*	4.7 (1.1)	70	10
44. My organization considers the interests of others throughout the acquisition process.*	4.5 (1.2)	80	12
Strategy and Purpose – Resource Investment in Collaboration	**4.0 (1.1)**		
6. My organization has committed adequate time, budget and personnel to interorganizational collaboration.*	4.2 (1.3)	62	30
11. My organization is willing to invest resources to accomplish interorganizational goals.*	4.3 (1.1)	76	18
17. My organization has assigned adequate personnel to the work required for effective interorganizational collaboration.*	3.6 (1.3)	46	44
Structure – Structural Flexibility	**4.6 (.9)**		
7. My organization can quickly form or modify partnerships as requirements change.*	4.3 (1.3)	74	24
13. My organization is flexible in adapting its processes and procedures to better fit with other organizations involved in the acquisition process.*	4.4 (1.1)	78	22
48. My organization is responsive to the requirements of other organizations with which we work.**	5.1 (1.1)	91	8
Lateral Processes – Collaborative Learning Systems	**3.7 (1.2)**		
27. My organization commits adequate human and financial resources to training with other organizations.*	3.4 (1.4)	44	46

29. My organization has strong norms for learning from other organizations.*	3.6 (1.3)	46	46
31. My organization works with other organizations to identify lessons learned for improved collaboration.*	4.1 (1.2)	66	32
Lateral Processes – Information Sharing	**4.3 (1.1)**		
23. My organization has strong norms that encourage sharing information with other organizations.*	4.1 (1.4)	50	40
28. My organization provides other agencies adequate access to information we have that is relevant to their work.*	4.2 (1.3)	68	26
43. Members of my organization share information with other organizations.*	4.5 (1.2)	84	12
Lateral Processes – Social Capital	**4.4 (1.2)**		
25. Our employees know who to contact in other agencies for information or decisions.*	4.0 (1.5)	63	32
26. Members of my organization take the initiative to build relationships with their counterparts in other organizations.*	4.7 (1.1)	86	12
Incentives and Reward Systems – Incentives and Reward Systems	**4.1 (1.1)**		
19. Engaging in interorganizational activities at work is important to career advancement in my organization.*	4.8 (1.0)	90	8
20. My organization rewards employees for investing time and energy in building collaborative relationships.*	4.0 (1.5)	60	32
45. My organization rewards members for their interorganizational collaborative activities.*	3.6 (1.6)	48	44
46. Collaborative talents and achievements are considered when people are reviewed for promotion.*	3.8 (1.6)	46	30
People – Individual Collaborative Capacities	**4.5 (.9)**		
33. Our employees have the collaborative skills (e.g., conflict management, team process skills) needed to work effectively with other agencies.*	4.1 (1.2)	74	26
34. Members of my organization are aware of the capabilities of other organizations with which we work.*	4.2 (1.2)	70	26
35. Members of my organization respect the expertise of those in other organizations with whom we work.*	4.7 (1.1)	86	12
36. Members of my organization understand how our work relates to the work of the other organizations with whom we need to collaborate.*	4.6 (1.2)	84	14
38. Members of my organization are able to appreciate another organization's perspective on a problem or course of action.*	4.5 (1.1)	84	16
42. Members of my organization seek input from other organizations.*	4.6 (1.2)	86	10
53. Members of my organization are willing to engage in a shared decision making process with other organizations when	4.6 (1.2)	80	14

addressing interorganizational issues.*			
Metrics for Collaboration	**3.4 (1.2)**		
16. My organization has identified measurement criteria or performance metrics to evaluate interorganizational collaboration efforts.*	3.0 (1.4)	26	56
22. My organization has established clear performance standards regarding interorganizational work.*	3.7 (1.3)	50	40
Interagency Team Support	**4.5 (.9)**		
51. My organization gives members of interorganizational teams adequate authority to speak on behalf of the organization.*	4.5 (1.1)	74	16
52. My organization supports the decisions and recommendations of the interorganizational team.*	4.4 (1.0)	72	16
Barriers	**3.4*** (1.1)**		
14. Conflicting organizational policies make collaboration difficult.*	2.4*** (1.4)	76	20
18. A history of interorganizational conflict affects our interorganizational capability.*	3.1*** (1.3)	52	32
37. Members of my organization tend to be suspicious and distrustful of their counterparts in other organizations.*	4.2*** (1.6)	28	64
49. I face incompatible requirements or requests when working with other organizations.**	3.7*** (1.5)	54	46

"% Agree" was the percent of people who selected 4, 5, or 6 on the Likert Scale.
"% Disagree" was the percent of people who selected 1, 2, or 3 on the Likert Scale.
When the percent total for an item is less than 100%, this is the result of "Don't know" or a non-response.

* 6 point scale; 1-Strongly Disagree to 6-Strongly Agree

** 6 point scale; 1-Almost Never to 6-Almost Always

***Recoded value to allow direct comparability

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Appendix C. Results for Unscaled Items and Demographics

A. Contract Administration Office A (N=20)

Unscaled Item	Mean	Agree	Disagree
10. My organization strives to meet the DoD guidance on collaboration.*	4.6	65%	15%
16. Institutionally sponsored efforts to develop our collaborative know-how and skills receive a high priority for funding in our organization.*	3.4	45%	35%
22. My organization's interorganizational collaborations are supported by collaborative planning tools and technologies.*	3.2	45%	50%
25. My organization understands the capabilities and requirements of the organizations with which we work or might work.*	3.7	60%	35%
31. My organization has adequate access to needed information from other organizations.*	3.4	60%	40%
33. My organization has the technical interoperability (e.g., information systems, accounting systems) to enable effective interorganizational collaboration.*	3.2	55%	40%
41. I have a clear understanding of my responsibilities relating to interorganizational collaboration.*	4.7	80%	15%
48. Members of my organization are honest and direct with their counterparts in other organizations.*	4.1	60%	35%
55. My organization understands how the other organizations we work with make decisions.*	3.9	65%	30%
56. My organization has a history of working well with other agencies.*	4.0	60%	30%

"% Agree" was the percent of people who selected 4, 5, or 6 on the Likert Scale.
"% Disagree" was the percent of people who selected 1, 2, or 3 on the Likert Scale.
When the percent total for an item is less than 100%, this is the result of "Don't know" or a non-response.

* 6 point scale; 1-Strongly Disagree to 6-Strongly Agree

Demographic Item	Choices for Response	Response
1. For which organization do you currently work?	CAO A	100%
2. Which best describes your Acquisition Function or Career Field?	Business, Cost Estimating, and Financial Management	5%
	Contracting	30%
	Information Technology	10%
	Production, Quality, & Manufacturing	10%
	Program Management	10%
	Systems Planning, Research, Development & Engineering-Program Systems Engineer	20%
	Systems Planning, Research, Development & Engineering-Science and Technology Manager	5%
	Systems Planning, Research, Development & Engineering-Systems Engineering	10%
3. What is your current DAWIA Certification for your career field?	Level 1	25%
	Level 2	55%
	Level 3	20%
4. For most of the programs with which you are currently involved, which phase of the acquisition process predominantly applies?	Technology Development	10%
	System Development & Demonstration	60%
	Production & Deployment	10%
	Operations & Support	20%
51. How many interorganizational teams are you on?	Zero	10%
	One	40%
	Two	15%
	Three	15%
	Four	5%
	Five	0%
	Six or More	15%
57. How high is the risk if interorganizational coordination is not effective?	Very Low Risk	0%
	Low Risk	0%
	Moderate Risk	15%
	High Risk	30%

	Very High Risk	45%
	Don't Know	10%
58. To what extent is there consensus across participating organizations as to the purpose and value of collaboration?	Strong Disagreement	0%
	Limited Disagreement	10%
	Limited Agreement	35%
	Strong Agreement	30%
	Don’t' Know	25%
59. To what extent is the most typical problem or benefit motivating interorganizational collaboration time critical?	Time critical within hours	5%
	Within days	50%
	Within a couple of months	30%
	Within a year	0%
	Longer than a year	0%
	Don't know	15%
60. How would you rate the overall success of your organization in collaborating with other organizations?	Very Poor	10%
	Poor	10%
	Somewhat Poor	10%
	Somewhat Good	35%
	Good	15%
	Very Good	20%
	Don't Know	0%
61. How often does your organization participate in formal interorganizational meetings?	Daily	5%
	Weekly	25%
	Monthly	25%
	Quarterly	5%
	About every six months	0%
	Annually	0%
	Don't Know	40%
62. How many people are employed by your organization?	1 to 50	50%
	51 to 100	30%
	101 to 150	0%
	151 to 200	0%

	More than 200	0%
	Don't Know	10%
	No response	10%
63. What percentage of the people who work for your organization are in the military?	Less than 20 percent	80%
	Between 21 and 40 percent	10%
	Don't Know	10%
64. How long has your organization been involved in interorganizational collaborations?	Never	0%
	Less than 6 months	10%
	6 months to 1 year	5%
	1 to 2 years	5%
	2 to 3 years	5%
	3 to 5 years	0%
	More than 5 years	45%
	Don't Know	30%
65. What is the geographic proximity of these participating organizations?	Less than 10 miles	35%
	11 to 100 miles	15%
	101 to 500 miles	0%
	501 to 3500 miles	15%
	More than 3500 miles	5%
	Don't Know	25%
	No response	5%
66. How many years have you work for your current organization?	0 to 5 years	40%
	6 to 10 years	10%
	11 to 15 years	0%
	16 to 20 years	10%
	More than 20 years	15%
	No response	25%
67. With how many acquisition programs are you involved?	1 to 5	65%
	6 to 10	25%
	11 to 15	5%
	More than 15	5%

B. Contract Administration Office B (N=27)

Item	Mean	Agree	Disagree
10. My organization strives to meet the DoD guidance on collaboration.*	4.3	64%	11%
16. Institutionally sponsored efforts to develop our collaborative know-how and skills receive a high priority for funding in our organization.*	3.6	57%	32%
22. My organization's interorganizational collaborations are supported by collaborative planning tools and technologies.*	3.7	54%	39%
25. My organization understands the capabilities and requirements of the organizations with which we work or might work.*	4	68%	29%
31. My organization has adequate access to needed information from other organizations.*	3.6	43%	46%
33. My organization has the technical interoperability (e.g., information systems, accounting systems) to enable effective interorganizational collaboration.*	3.7	54%	36%
41. I have a clear understanding of my responsibilities relating to interorganizational collaboration.*	4.1	64%	32%
48. Members of my organization are honest and direct with their counterparts in other organizations.*	4.1	64%	25%
52. My organization gives members of interorganizational teams adequate authority to speak on behalf of the organization.*	3.8	54%	21%
53. My organization supports the decisions and recommendations of the interorganizational team.*	3.9	50%	25%
54. Members of my organization are willing to engage in a shared decision making process with other organizations when addressing interorganizational issues.*	4.1	61%	25%
55. My organization understands how the other organizations we work with make decisions.*	3.9	68%	25%
56. My organization has a history of working well with other agencies.*	4.1	61%	25%

"% Agree" was the percent of people who selected 4, 5, or 6 on the Likert Scale.
"% Disagree" was the percent of people who selected 1, 2, or 3 on the Likert Scale.
When the percent total for an item is less than 100%, this is the result of "Don't know" or a non-response.

* 6 point scale; 1-Strongly Disagree to 6-Strongly Agree

Unscaled Item	Choice for Response	Response
1. For which organization do you currently work?	CAO B	100%
2. Which best describes your Acquisition Function or Career Field?	Auditing	3%
	Contracting	19%
	Information Technology	3%
	Production, Quality, & Manufacturing	43%
	Program Management	21%
	Systems Planning, Research, Development & Engineering-Systems Engineering	11%
3. What is your current DAWIA Certification for your career field?	Level 1	4%
	Level 2	75%
	Level 3	21%
4. For most of the programs with which you are currently involved, which phase of the acquisition process predominantly applies?	System Development & Demonstration	39%
	Production & Deployment	46%
	Operations & Support	14%
51. How many interorganizational teams are you on?	Zero	32%
	One	25%
	Two	18%
	Three	14%
	Four	4%
	Five	0%
	Six or More	7%
57. How high is the risk if interorganizational coordination is not effective?	Very Low Risk	0%
	Low Risk	4%
	Moderate Risk	32%
	High Risk	39%
	Very High Risk	18%
	Don't Know	7%
58. To what extent is there consensus across participating organizations as to the purpose and value of collaboration?	Strong Disagreement	4%

	Limited Disagreement	11%
	Limited Agreement	36%
	Strong Agreement	18%
	Don’t' Know	32%
59. To what extent is the most typical problem or benefit motivating interorganizational collaboration time critical?	Time critical within hours	4%
	Within days	29%
	Within a couple of months	21%
	Within a year	0%
	Longer than a year	0%
	Don't know	46%
60. How would you rate the overall success of your organization in collaborating with other organizations?	Very Poor	4%
	Poor	14%
	Somewhat Poor	7%
	Somewhat Good	29%
	Good	21%
	Very Good	7%
	Don't Know	18%
61. How often does your organization participate in formal interorganizational meetings?	Daily	11%
	Weekly	21%
	Monthly	11%
	Quarterly	11%
	About every six months	0%
	Annually	11%
	Don't Know	35%
62. How many people are employed by your organization?	1 to 50	19%
	51 to 100	37%
	101 to 150	11%
	151 to 200	0%
	More than 200	7%
	Don't Know	7%
	No response	19%

63.What percentage of the people who work for your organization are in the military?	Less than 20 percent	79%
	Over 80 percent	4%
	Don't Know	7%
	No response	10%
64. How long has your organization been involved in interorganizational collaborations?	Never	4%
	Less than 6 months	4%
	6 months to 1 year	0%
	1 to 2 years	4%
	2 to 3 years	0%
	3 to 5 years	0%
	More than 5 years	54%
	Don't Know	25%
	No response	10%
65. What is the geographic proximity of these participating organizations?	Less than 10 miles	29%
	11 to 100 miles	0%
	101 to 500 miles	11%
	501 to 3500 miles	21%
	More than 3500 miles	7%
	Don't Know	25%
	No response	7%
66. How many years have you work for your current organization?	0 to 5 years	30%
	6 to 10 years	19%
	11 to 15 years	4%
	16 to 20 years	7%
	More than 20 years	19%
	No response	22%
67. With how many acquisition programs are you involved?	1 to 5	59%
	6 to 10	11%
	11 to 15	0%
	More than 15	7%
	No response	22%

C. Contractor (N=50)

Unscaled Item	Mean	Agree	Disagree
9. My organization strives to meet the DoD guidance on collaboration.*	5 (1.2)	82%	8%
15. Institutionally sponsored efforts to develop our collaborative know-how and skills receive a high priority for funding in our organization.*	3.4 (1.2)	36%	40%
21. My organization's interorganizational collaborations are supported by collaborative planning tools and technologies.*	3.6 (1.2)	44%	40%
24. My organization understands the capabilities and requirements of the organizations with which we work or might work.*	4.3 (1.2)	68%	30%
30. My organization has adequate access to needed information from other organizations.*	3.6 (1.3)	50%	44%
32. My organization has the technical interoperability (e.g., information systems, accounting systems) to enable effective interorganizational collaboration.*	4.1 (1.2)	68%	20%
40. I have a clear understanding of my responsibilities relating to interorganizational collaboration.*	4.5 (1.4)	78%	22%
47. Members of my organization are honest and direct with their counterparts in other organizations.*	4.8 (1.1)	84%	10%
54. My organization understands how the other organizations we work with make decisions.*	4.1 (1.3)	62%	28%
55. My organization has a history of working well with other agencies.*	4.5 (1.2)	84%	12%

"% Agree" was the percent of people who selected 4, 5, or 6 on the Likert Scale.
"% Disagree" was the percent of people who selected 1, 2, or 3 on the Likert Scale.
When the percent total for an item is less than 100%, this is the result of "Don't know" or a non-response.
* 6 point scale; 1-Strongly Disagree to 6-Strongly Agree

Demographic Item	Choice for Response	Response
1. Which best describes your Acquisition Function or Career Field?	Contracting	22%
	Quality Assurance	88%
	Other	-
2. For most of the programs with which you are currently involved, which phase of the acquisition process predominantly applies?	Concept Refinement	-
	Technology Development	-
	System Development and Demonstration	16%
	Production and Deployment	42%
	Operations and Support	8%

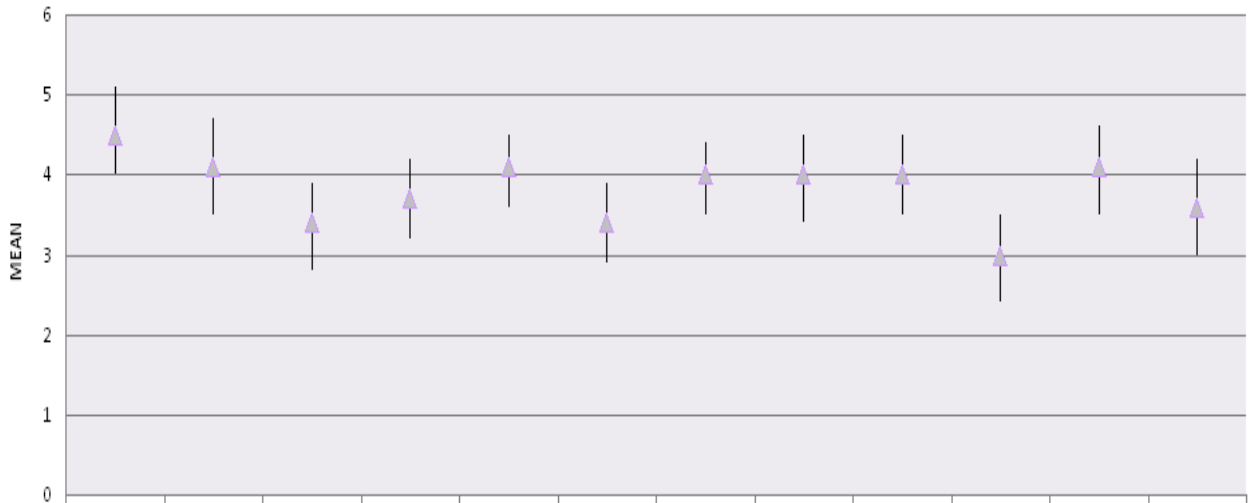
	End-to-End	16%
	Other	6%
3. Which best describes your work level position?	Director	6%
	Senior Manager	20%
	Manager	8%
	Individual Contributor	62%
	Other	2%
50. How many interorganizational teams are you on?	Zero	12%
	One	-
	Two	30%
	Three	26%
	Four	10%
	Five	4%
	Six or More	18%
56. How high is the risk if interorganizational coordination is not effective?	Very Low Risk	2%
	Low Risk	6%
	Moderate Risk	20%
	High Risk	34%
	Very High Risk	36%
	Don't Know	-
	No Response	2%
57. To what extent is there consensus across participating organizations as to the purpose and value of collaboration?	Strong Disagreement	2%
	Limited Disagreement	6%
	Limited Agreement	50%
	Strong Agreement	28%
	Don't' Know	14%
58. To what extent is the most typical problem or benefit motivating interorganizational collaboration time critical?	Time critical within hours	14%
	Within days	40%
	Within a couple of months	18%
	Within a year	2%
	Longer than a year	-
	Don't Know	24%
	No Response	2%

59. How would you rate the overall success of your organization in collaborating with other organizations?	Very Poor	-
	Poor	2%
	Somewhat Poor	10%
	Somewhat Good	26%
	Good	36%
	Very Good	26%
	Don't Know	-
60. How often does your organization participate in formal interorganizational meetings?	Daily	22%
	Weekly	36%
	Monthly	8%
	Quarterly	6%
	About every six months	4%
	Annually	2%
	Don't Know	22%
61. How many people are employed by your organization?	1 to 50	44%
	51 to 100	6%
	101 to 150	2%
	151 to 200	-
	More than 200	22%
	Don't Know	12%
	No response	14%
62. How long has your organization been involved in interorganizational collaborations?	Never	-
	Less than 6 months	2%
	6 months to 1 year	2%
	1 to 2 years	2%
	2 to 3 years	6%
	3 to 5 years	6%
	More than 5 years	40%
	Don't Know	38%
	No response	4%
63. What is the geographic proximity of these participating organizations?	Less than 10 miles	34%
	11 to 100 miles	2%

	101 to 500 miles	4%
	501 to 3500 miles	22%
	More than 3500 miles	10%
	Don't Know	24%
	No response	4%
64. How many years have you work for your current organization?	0 to 5 years	28%
	6 to 10 years	22%
	11 to 15 years	8%
	16 to 20 years	4%
	More than 20 years	14%
	No response	22%
65. With how many acquisition programs are you involved?	1 to 5	60%
	6 to 10	16%
	11 to 15	6%
	More than 15	6%
	No response	12%

Appendix D. Standard Error of the Mean

A. CAO A



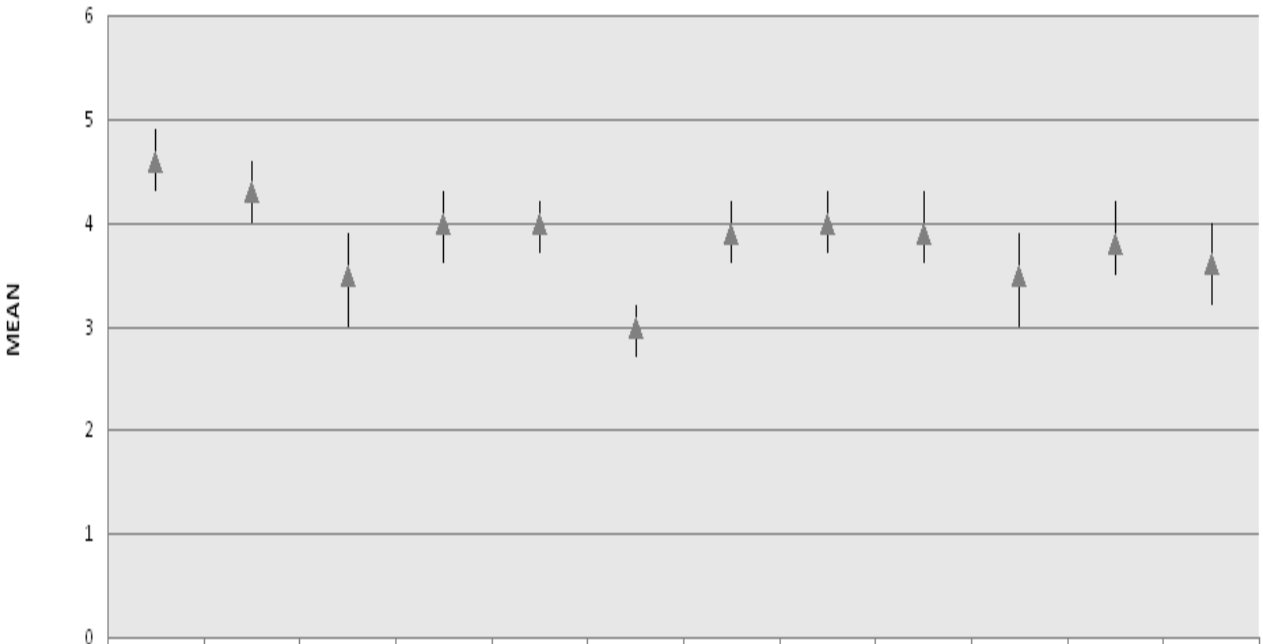
	Need to Collaborate	Strategic Collaobratior	Resource Investment i Collaboratior	Incentives and Rewards	Structural Flexibility	Barriers to Collaboratior	Individual Collaborative Capacity	Social Capita	Information Sharing	Collaborative Learning System	Interagency Team Suppor	Metrics
High	5.1	4.7	3.9	4.2	4.5	3.9	4.4	4.5	4.5	3.5	4.6	4.2
Low	4	3.5	2.8	3.2	3.6	2.9	3.5	3.4	3.5	2.4	3.5	3
Mean	4.5	4.1	3.4	3.7	4.1	3.4	4	4	4	3	4.1	3.6

CAO A had the smallest number of respondents (n=20) compared to CAO B and the Contractor. CAO A also had, on average, the highest standard deviation. CAO A's actual mean probably falls within a relatively wide range of ±0.6 of the reported mean. Due to the wide range, it is difficult to assign an interpretive rating for each scale because the range crosses into several different categories of agreement. For example, the *metrics* scale range begins at 3.0 and ends at 4.2. The actual mean could fall anywhere within this range indicating possibly moderate disagreement, minimal disagreement, a neutral rating, minimal agreement, or moderate agreement.

If a scale's range within an organization, does not cross into another scale's range, this outcome suggest a difference in the scale means. For example, there is

a difference between the *collaborative learning systems* scale and the *need to collaborate* scale because their ranges do not cross.

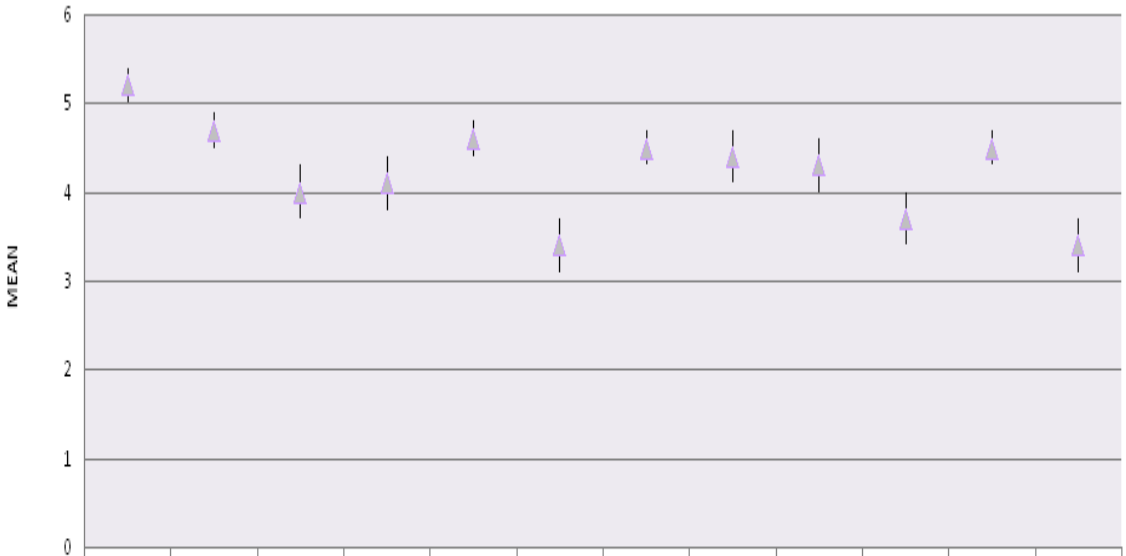
B. CAO B



	Need to Collaborate	Strategic Collaobration	Resource Investment i Collaboratic n	Incentives and Reward:	Structural Flexibility	Barriers to Collaboratio n*	Individual Collaborativ e Capacity	Social Capital	Information Sharing	Collaborativ e Learning System	Interagency Team Support	Metrics
High	4.9	4.6	3.9	4.3	4.2	3.2	4.2	4.3	4.3	3.9	4.2	4
Low	4.3	4	3	3.6	3.7	2.7	3.6	3.7	3.6	3	3.5	3.2
▲Mean	4.6	4.3	3.5	4	4	3	3.9	4	3.9	3.5	3.8	3.6

CAO B had a somewhat larger number of respondents (n=27) than CAO A and had, on average, a smaller standard deviation. Compared to CAO A, most of CAO B's scale ranges were narrower and did not cross over many different categories of agreement. For example, the s*trategic collaboration* scale range for CAO A is 3.5 (neutral rating) to 4.7 (moderate agreement), while CAO B's s*trategic collaboration* scale range is 4.0 (moderate agreement) to 4.6 (moderate agreement). CAO B's actual mean for each scale probably falls within ±0.4 of the reported mean as indicated in the figure above.

C. Contractor



	Need to Collaborate	Strategic Collaobration	Resource Investment i Collaboration	Incentives and Rewards	Structural Flexibility	Barriers to Collaboration*	Individual Collaborative Capacity	Social Capital	Information Sharing	Collaborative Learning System	Interagency Team Suppor	Metrics
High	5.4	4.9	4.3	4.4	4.8	3.7	4.7	4.7	4.6	4	4.7	3.7
Low	5	4.5	3.7	3.8	4.4	3.1	4.3	4.1	4	3.4	4.3	3.1
Mean	5.2	4.7	4	4.1	4.6	3.4	4.5	4.4	4.3	3.7	4.5	3.4

The Contractor reported the highest number of respondents (n=50) and the lowest standard deviation on average than both CAO A and CAO B. The Contractor's scale ranges were the narrowest among all three organizations. For example, the resource investment in collaboration scale range for CAO A was 1.1, for CAO B it was 0.9 and only 0.6 for the Contractor. The Contractor's actual mean probably falls within a relatively narrow band of ±0.3 of the reported mean. There is more confidence in the Contractor's reported means compared to both CAO A and CAO B because of the lower standard error of the means.

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- Managing Services Supply Chain
- MOSA Contracting Implications
- Portfolio Optimization via KVA + RO
- Private Military Sector
- Software Requirements for OA
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- The Software, Hardware Asset Reuse Enterprise (SHARE) repository

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- Contractors in 21st Century Combat Zone
- Joint Contingency Contracting
- Model for Optimizing Contingency Contracting Planning and Execution
- Navy Contract Writing Guide
- Past Performance in Source Selection
- Strategic Contingency Contracting
- Transforming DoD Contract Closeout
- USAF Energy Savings Performance Contracts
- USAF IT Commodity Council
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- Acquisitions via leasing: MPS case
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- Retention
- The Navy's Selective Reenlistment Bonus (SRB) Management System
- Tuition Assistance

Logistics Management

- Analysis of LAV Depot Maintenance
- Army LOG MOD
- ASDS Product Support Analysis
- Cold-chain Logistics
- Contractors Supporting Military Operations
- Diffusion/Variability on Vendor Performance Evaluation
- Evolutionary Acquisition
- Lean Six Sigma to Reduce Costs and Improve Readiness

- Naval Aviation Maintenance and Process Improvement (2)
- Optimizing CIWS Lifecycle Support (LCS)
- Outsourcing the Pearl Harbor MK-48 Intermediate Maintenance Activity
- Pallet Management System
- PBL (4)
- Privatization-NOSL/NAWCI
- RFID (6)
- Risk Analysis for Performance-based Logistics
- R-TOC Aegis Microwave Power Tubes
- Sense-and-Respond Logistics Network
- Strategic Sourcing

Program Management

- Building Collaborative Capacity
- Business Process Reengineering (BPR) for LCS Mission Module Acquisition
- Collaborative IT Tools Leveraging Competence
- Contractor vs. Organic Support
- Knowledge, Responsibilities and Decision Rights in MDAPs
- KVA Applied to Aegis and SSDS
- Managing the Service Supply Chain
- Measuring Uncertainty in Eared Value
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