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# The Joint Effects-based Contracting Execution System: A Proposed Enabling Concept for Future Joint Expeditionary Contracting Execution

**30 December 2008**

**by**

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# Abstract

The purpose of this Master of Business Administration Professional Report is to deliver a concept enabling joint effects-based contracting (EBC) execution throughout all of the following phases of the combatant commander's (CCDR's) campaign plan: *shaping, deterring, seizing the initiative, dominating,* and *stabilizing and enabling* (Phases 0-V), respectively. Under the *enabling civil authority phase* of Operation Iraqi Freedom (OIF), the Commanding General of the Joint Contracting Command-Iraq/Afghanistan (JCC-I/A) pioneered effects-based contracting (EBC) to align tactical contracting efforts with the strategic objectives of the OIF campaign plan. The JCC-I/A accomplished this by integrating contingency contracting officers (CCOs) with the warfighters' operational planning cycles, linking contracting efforts with desired strategic operational effects, and prioritizing contracting work based on the warfighters' main efforts.

This project applies EBC methodologies and the systems engineering process to introduce the framework for the Joint Effects-based Contracting Execution System (JEBCES)—an integrated composite of people, products, and processes to deliver an acquisition capability. Within this framework, the researchers propose a Phase-based Acquisition Capability (PBAC) to enable forward-leaning, responsive joint expeditionary contract support. This framework emphasizes providing future CCOs with a pre-awarded, rapidly deployable acquisition capability, thereby creating greater uniformity and efficiency in joint EBC execution.



**Keywords:** Contingency, Contracting, Effects-based Contracting

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# About the Authors

**Captain Kelley Poree** enlisted in the United States Army in 1990. As an Infantryman, he served as a team leader, squad leader, section leader, and ultimately, as a platoon sergeant in Bravo Company, 1st Battalion, 9th Calvary Regiment in Fort Hood, TX. After this assignment, he was selected for the Reserve Officer Training Corps in 1998 and was commissioned in the United States Air Force in 2000. Since his commission, he has served on numerous assignments—including, but not limited to:

- Aide-de-Camp to Commanding General of the Joint Contracting Command-Iraq/Afghanistan
- Contracting Officer, Regional Contracting Center, Fallujah, Iraq
- Section Chief, 88th Contracting Squadron, Wright-Patterson AFB, OH
- Contracting Officer, Oil Sector, Coalition Provisional Authority, Baghdad, Iraq
- Special Operations Forces Contract Manager, Special Operations Forces Group/Combat Search and Rescue Systems Program Office, Wright Patterson AFB, OH
- Assistant Traffic Management Officer, 2nd Logistics Readiness Squadron, Barksdale AFB, LA
- Contracting Officer, Diego Garcia, British Indian Ocean Territory
- Contract Management Officer, 2nd Contracting Squadron, Barksdale AFB, LA

Captain Poree is Acquisition Professional Development Program Level III certified in contracting and Level I certified in program management. He graduated the Naval Postgraduate School in December 2008 with a Master of Business Administration degree (with a concentration in Strategic Purchasing). Captain Poree is married to the former Charlotta Marie Ragas of Baton Rouge, LA, and they have four children: Kaleb (16), Charlee (15), Joshua (14), and Deborah (11).

**Captain Katrina Curtis** was commissioned in the Air Force in 2001 through the Air Force ROTC program. She graduated from the University of Portland in 2001 with a Bachelor of Business Administration degree. Capt. Curtis received a

Master in Business Administration degree from the Naval Postgraduate School in December of 2008. She served as a contracting officer at Goodfellow AFB, TX, from June 2001 until June 2004 and was responsible for commodity, service, and construction contracts in support of base-level operations. In June 2004, she reported to the Defense Contract Management Agency at the Boeing Seattle office. Capt. Curtis was the Administrative Contracting Officer (ACO) for the Large Aircraft Spares and Repairs contracts until January 2005. From January 2005 through July 2005, she deployed to Camp Victory in Baghdad, Iraq. She was the ACO for 17 Forward Operating Bases around the Baghdad area and was responsible for the LOGCAP contract for the area valued at $4.6 Billion. From July 2005 until June 2007, she was the ACO for the AWACS and CALCM (Conventional Air Launch Cruise Missile) programs. Capt. Curtis received the National Contract Management Association's Certified Federal Contracting Certification in December 2008 and also holds DAWIA Level III certification in contracting and Level II in program management. She is married to Thomas W. Heffner of Roseburg, Oregon, and they have one child, Mackenzie (1).

**Captain Jeremy Morrill** was commissioned a second lieutenant in the United States Air Force in December 2001 from the Officer Training School at Maxwell AFB, AL. In December 2008 Capt. Morrill received a Master of Business Administration with an emphasis in Strategic Purchasing from the Naval Postgraduate School in Monterey, CA. He is DAWIA APDP Level III certified in contract management and Level II in program management, and a graduate of the Air and Space Basic Course and Squadron Officer School at Maxwell AFB, AL. He received his Bachelor of Arts in Business Administration from the University of Phoenix in Phoenix, AZ.

Captain Morrill's operational experience includes the following: Program Manager/Team Lead, Defense Contract Management Agency (2005-2007); Contracting Officer, 314 CONS, Air Education and Training Command (2004-2005); Contracts Manager, 314 CONS, Air Education and Training Command (2002-2004);

and Installation/Agency Government Purchase Card Coordinator, 314 CONS, Air Education and Training Command. Captain Morrill's joint experience includes: Administrative Contracting Officer, Logistics Civil Augmentation Program (LOGCAP), Kandahar Air Field, Afghanistan (2005-2006); Chief, Construction and Engineering, Theater Allied Contracting Office (TACO), North Atlantic Treaty Organization (NATO), Sarajevo, Bosnia and Herzegovina (2004-2005). He is married to the former Christina Marie Baxter and they have three children, Jeremy (14), Nicole (12), and Alexis (8).

**Lieutenant Commander Steven Sherwood** enlisted in the Navy in 1988. In 1998 he was a cum laude graduate of Hawaii Pacific University, receiving a Bachelor of Science of Business Administration with a Major in Computer Information Systems; he also earned an Associates of Science of Marketing. He received a commission as a Navy Supply Officer through Officer Candidate School. He will graduate from the Naval Postgraduate School (NPS) with a Master of Business Administration (MBA), with an emphasis in Government Contracting. LCDR Sherwood's past tours include the USS Makin Island (LHD 8) as an Aviation Supply Officer, the Naval Regional Contracting Center Singapore as Services Officer, and the USS Buffalo (SSN 715) as a Supply Officer. While assigned to Makin Island, Sherwood volunteered for an individual augmentation (IA) to the Joint Contracting Command Iraq/Afghanistan (JCC I/A) in Baghdad, Iraq as an Operations Officer. As the Services Officer at the Naval Regional Contracting Center, Sherwood acted as a technical representative for the contracting officer on five contracts whose value exceeded $200 million and participated on four source–selection committees for contracts valued in excess of $500 million. Sherwood also oversaw the Payalebar Air base AMC operations, Husbanding Services for the Pacific, Military Welfare and Recreation (MWR) services for all port of calls in the Pacific, and Base Operating Services for Singapore. He participated in various roles on source-selection boards; he consolidated Husbanding Services for all Pacific Ports and consolidated MWR services for the Pacific, Software Development for automated ordering of Husbanding Services for ships conducting port of calls. As

one of the Operations Officers at the JCC-I/A, he was responsible for five programs that included the Host Nation First program, spiral development of an SQL database to account for all contracting actions in theater (which was adopted by SOCOM and the Air Force for contingency contracting), the Women's Business Advocate program, and was a member of the Economic Development Committee for Iraq. He is married to the former Flora Bautista of San Francisco, California, and they have two children, Chanel (12) and Michael (10). LCDR Sherwood's awards include the Joint Meritorious Service Medal, Navy Commendation Medal, Navy Achievement Medal (5), and other unit and service awards.

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# Table of Contents

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# List of Acronyms

| | |
|---|---|
| ACO | Administrative Contracting Officer |
| AOR | Area of Responsibility |
| BSP | Baghdad Security Plan |
| CAF | Contractors Assisting the Force |
| CCO | Contingency Contracting Officer |
| CCDR | Combatant Commander |
| CLIN | Contract Line Item Number |
| CPA | Coalition Provisional Authority |
| DOD | Department of Defense |
| DOS | Department of State |
| EBC | Effects-based Contracting |
| EBO | Effects-based Operations |
| ELO | Economic Line of Operation |
| FM | Field Manual |
| FRAGO | Fragmentation Order |
| GOI | Government of Iraq |
| HCA | Head of Contracting Activity |
| IRMO | Iraq Reconstruction Management Office |
| IRRF | Iraqi Relief and Reconstruction Fund |
| ISF | Iraqi Security Forces |
| JCC-I/A | Joint Contracting Command-Iraq/Afghanistan |
| JEBCES | Joint Effects-based Contracting Execution System |
| JROC | Joint Reconstruction Operations Center |

| | |
|---|---|
| LOGCAP | Logistics Civilian Augmentation Program |
| LOO | Lines of Operation |
| MLO | Military Line of Operation |
| MNF-I | Multi-national Forces – Iraq |
| MNSTC-I | Multi-national Security Transitions Corps Iraq |
| MSC | Major Subordinate Command |
| NGO | Non-governmental Organization |
| NSSVI | National Military Security Strategy for Victory in Iraq |
| OIF | Operation Iraqi Freedom |
| ORHA | Office of Reconstruction and Humanitarian Assistance |
| OTF | Operation Together Forward |
| PBAC | Phase-based Acquisition Capability |
| PCO | Project and Contracting Office |
| PMO | Program Management Office |
| PRT | Provincial Reconstruction Teams |
| SIGIR | Special Inspector General for Iraq Reconstruction |
| TLO | Transitional Line of Operation |
| USACE GRD | US Army Corps of Engineers Gulf Region Division |
| USAID | US Agency for International Development |
| USCENTCOM | US Central Command |
| YTTM | Yoder-Three-Tier Model |

# Executive Summary

The Joint Effects-based Contracting Execution System (JEBCES) provides the framework for an integrated composite of people, products and processes to deliver an acquisition capability. Within this framework, the researchers proposed a Phase-based Acquisition Capability (PBAC) as the contracting vehicle to absorb cumulative variations in warfighter requirements definitions and Contingency Contracting Officer (CCO) execution methodologies; thereby creating uniformity and efficiency in joint expeditionary contracting execution throughout all phases of the Combatant Commander's (CCDR's) campaign plan.

The researchers based PBAC on their experiences with the Department of Army's contracting model for the Logistics Civilian Augmentation Program (LOGCAP) and the United States Special Operation Command's Integrated Weapon System Support Program in which standard contracting vehicles support multiple phases of contingency operations as well as sustain major weapon system platforms through discrete contract line item number (CLIN) structures. PBAC provides the framework for time-definite delivery of standard supplies and services through standardized contracting vehicles.

Through discrete-event simulation and modeling of FY 2007 *enabling civil authority phase* requirements data through the current joint contingency contracting process and the proposed PBAC, the researchers conclude the following. To the extent that the DOD standardizes both operational (kinetic) and reconstruction (post-kinetic) requirements (based on a full phase-based spend analysis), and contracting execution methodologies (based on standard rapid acquisition methods), the enterprise can optimize the use of CCOs and provide a high percentage of uniformed requirements definitions to the warfighters.

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# I. Introduction

## A. Background

Initial efforts to integrate and synchronize tactical joint expeditionary contracting support with the strategic objectives of the OIF campaign plan were delayed by variations in CCO experience levels, contracting execution methodologies, and business processes. As a result, in November 2004 (under the *stabilize phase* (Phase IV) of the campaign plan), the United States Central Command (USCENTCOM) established the Joint Contracting Command-Iraq (JCC-I), and later established the JCC-I/A (Afghanistan) to unify the contracting effort. Under the *enable civil authority phase* (Phase V), the JCC-I/A implemented effects-based contracting (EBC) as an innovative method to successfully integrate CCOs into warfighter operational planning cycles in order to align tactical contracting support with the warfighters' main efforts.

Although a Joint Contracting Command (JCC), using EBC methodologies, has significant implications for improved joint expeditionary contracting execution, recent reports such as the *2007 Report of the Commission on Army Acquisition and Program Management in Expeditionary Operations* (Gansler Report) continue to underscore systemic variations in requirements definitions and service-unique tactics, techniques, and procedures (TTPs) for CCO training and development, which collectively influences contracting execution. Against this backdrop, the researchers introduce the framework for the Joint Effects-based Contracting Execution System (JEBCES) and within this framework, a researcher-proposed Phase-based Acquisition Capability (PBAC) as the contracting vehicle to enable forward-leaning, responsive joint expeditionary contracting execution.

Through discrete-event simulation and modeling of FY07 *enabling civil authority phase* data under the current joint contingency contracting process and the researcher-proposed PBAC, the authors examine the extent a PBAC could minimize

cumulative variations in warfighter requirements definitions and CCO execution methodologies to create uniformity and efficiency in joint expeditionary contracting execution.

## B. Objectives of the Research

The objective of this research is to analyze the application of a PBAC within the JEBCES framework. Through discrete-event simulation and modeling, the researchers will assess the value of equipping CCOs with a pre-awarded, rapidly deployable PBAC.

## C. Research Questions

The primary research question is: does transforming a baseline of common operational (kinetic) and reconstruction (post-kinetic) requirements into a standard PBAC improve joint EBC execution? To aid in addressing the primary research question, the researchers will also address four secondary questions:

1. How can a PBAC provide for a percentage of uniformed warfighter requirements definitions?
2. How can a PBAC provide for efficient use of limited contracting officer resources?
3. What are the benefits of integrating and synchronizing a PBAC into Phase 0 (*shaping phase*) of the Combatant Commander's campaign plan?
4. How can the JEBCES establish the framework to enable responsive joint expeditionary contracting execution?

## D. Methodology

Research for this project includes a literature review of government reports, joint publications, and academic research papers such as, but not limited to, previous Naval Postgraduate School contingency contracting theses and Congressional Research Reports. Additionally, the project team used *Arena 10.0 Forward Business Solutions* by Rockwell Software, Inc., to provide discrete-event simulation and modeling of the current joint expeditionary contracting execution

process and the researcher-proposed PBAC—specifically, how the PBAC affects CCO utilization rates and the cycle-time of warfighter requirements. The information used to develop models and FY07 requirements data was obtained from the JCC-I/A's current contingency contracting database, namely the Joint Contingency Contracting System. Finally, this project incorporates input from the personal experiences of the authors as a CCO/Aide-de-Camp to the Commanding General of the Joint Contracting Command, JCC-I/A Commanding General's Staff Operations Officer (J3), and as an Administrative Contracting Officer for the Logistics Civil Augmentation Program (LOGCAP) in Iraq and Afghanistan.

## E. Assumptions

The authors assume the reader has a fundamental understanding that the President of the United States is responsible for national security. The National Security Council (NSC) assists the President in determining how to effectively employ the diplomatic, informational, military, and economic instruments of power to achieve national goals. The NSC coordinates the efforts of all governmental agencies to execute synchronized strategies that effectively employ the instruments. The Department of Defense (DOD) prepares the National Defense Strategy to support the National Security Strategy. The National Military Strategy contains the advice of the Chairman of the Joints Chiefs of Staff on the role of the Armed Forces implementing the National Security and National Defense Strategies. The Chairman, on behalf of the Secretary of Defense, directs combatant commanders (CCDRs) to develop theater security cooperation plans as well as war and campaign plans (Department of the Army, 2005).

## F. Definitions and Terms

The following definitions are provided to establish the framework for the JEBCES:

> *Effects* – "an effect is a physical and/or behavioral state of a system that results from an action, set of actions, or another effect. A desired effect can

also be thought of as condition that can support achieving an associated objective, while an undesired effect is a condition that can inhibit progress toward an objective" (US Joint Forces Command, 2006, pp. III-12).

*Effects-based Operations* – "are defined here as operations conceived and planned in a systems framework that considers the full range of direct, indirect and cascading effect—effects that may be achieved by the application of military, diplomatic, psychological and economic instruments" (RAND, 2001).

*Enabling Concept* – "is a description of how a particular task or procedure is performed, within the context of a broader functional area, using a particular capability, such as a specific technology, training education program, organization, facility, etc. An enabling concept describes the accomplishment of a particular task that makes possible military function or sub-function" (Schmitt, 2002, p.10).

*Acquisition* – "acquiring by contract with appropriated funds of supplies or services (including construction) by and for the use of the Federal Government through purchase or lease, whether the supplies or serves are already in existence or must be created, developed, or demonstrated, and evaluated. Acquisition begins at the point when agency needs are established and includes the description of requirements to satisfy agency needs, solicitation and selection of sources, award of contracts, contracting financing, contract performance, contract administration, and those technical and management functions directly related to the process of fulfilling agency needs by contract" (General Services Administration, 2005, section 2.101).

*Contract Types* – "Contract types are grouped into two broad categories: fixed price and cost reimbursement contracts, in which the contractor has full responsibility for the performance costs and resulting profit (or loss), to cost-plus-fixed fee, in which the contractor has minimal responsibility for the

performance cost and the negotiated fee (profit) is fixed. In between there are various incentive contracts in which the contractor's responsibility for the performance costs and the profit or fee incentives offered are tailored to the uncertainties involved in contract performance" (GSA, 2005, section 16.1(b)).

*Delivery Order Contracts* – "Contract for a supply that does not procure or specify a firm quantity of supplies (other than a minimum and maximum quantity) and that provides for issuance of orders for the delivery of supplies during the period of the contract" (GSA, 2005, section 16.501).

*Task Order Contracts* – "Contract for services that does not procure or specify a firm quantity of service (other than a minimum and a maximum quantity) and that provides for the issuance of orders for the performance of tasks during the period of the contract" (GSA, 2005, section 16.501).

*Terminology* – Throughout the project, the terms "expeditionary" and "contingency" are used interchangeably.

*Theory of Constraints (TOC)* – The TOC proposes that "in any multi-stage processing system, one stage will be slower than the others.

The theory of constraints has 5 steps:

1. Identify the system constraints (no improvement is possible unless the constraint or weakest link is found)
2. Decide how to exploit the system constraints (Make the constraints as effective as possible)
3. Subordinate everything else to that decision (align every other part of the system to support the constraints even if this reduces the efficiency of non-constraint resources)
4. Evaluate the system constraints (if output is still inadequate, acquire more of this resource so it no longer is a constraint)
5. If in the previous steps, the constraints have been broken, go back to step 1, but do not let inertia become the system constraint. (After this constraint problem is solved, go back to the beginning and start over. This is a continuous process of improvement: identifying constraints,

breaking them, and then identifying the new ones that result)" (Apte et al., 2006, p. 103).

*Little's Law:* – Little's Law states "the following fundamental relation always holds true among the average flow rate (throughput), R, the average cycle-time, T, and the average inventory, I: I = R x T" (Apte et al., 2006, p. 20).

## G. Organization of Research

The following chapters capture the initial study on the JEBCES. Chapter I introduces the research project and provides background, objectives of the research, research questions, methodology and assumptions, key definitions and terms. Chapter II presents the warfighters' operational framework and examines the effectiveness of EBC methodologies under the current *enable civil authority phase* (Phase V). Chapter III reviews the evolution of the joint expeditionary contracting experience in Iraq from the *deter phase* (Phase I) through the *stabilize phase* (Phase IV) and highlights systemic variations in areas such as requirements definitions and service-specific TTPs for joint expeditionary contracting execution. Chapter IV introduces the framework for the JEBCES and presents a researcher-proposed PBAC as an enabling concept. Chapter V presents discrete-event simulation and modeling of the current joint expeditionary contracting execution process and the researcher-proposed PBAC. Chapter VI provides the simulation results and analysis, as well as implications for future joint EBC execution. Chapter VII presents the authors' conclusions and areas of further research.

# II. Overview of Operation Iraqi Freedom Campaign Plan, Lines of Operations, and Effects-Based Contracting

## A. Introduction

Before analyzing EBC methodologies, it is essential to establish a basic understanding of the warfighters' operational framework for OIF. The first section of this chapter provides background on the campaign plan phases and related activities. The second section describes the lines of operations (LOOs) within the campaign plan and highlights the importance of their synchronization. The third section introduces the JCC-I/A and analyzes the command's EBC methodologies during Operation Together Forward I (OTFI), construction of the Rusafa Law and Order Facility, and Iraqi Date Palm Spraying Operations, as these represent the broad range of environments in which EBC must facilitate conditions to achieve desired outcomes. Moreover, they illustrate the importance of synchronized, time-definite delivery of supplies and services to support the CCDR's strategic objectives. The authors thought it prudent to begin this discussion where joint EBC execution and the CCDR's strategic objectives converge—the campaign plan—followed by a discussion of the broader, national strategic framework that the campaign plan supports.

## B. OIF Campaign Plan Phases

> A campaign plan embodies the theater combatant commander's strategic vision for the arrangement of operations needed to attain the strategic objectives assigned by a higher authority. It achieves unity of effort with unified action (joint, combined or coalition, and interagency); clearly defines what constitutes success; and serves as the basis for subordinate planning. A campaign plan is the operational extension of the combatant commander's theater strategy. They translate strategic concepts into unified plans for military action by specifying how operations, logistics, and time will be used to attain theater strategic objectives. (Kidder, 2004, p.1)

Central to planning for major operations such as OIF is campaign plan phasing. Phasing (e.g., *shaping, deterring, seizing the initiative, dominating, and enabling civil authority*) assists commanders and staff in visualizing the entire campaign and defining requirements in terms of forces, resources, time, space and purpose to achieve strategic objectives (US Joint Forces Command, 2006).

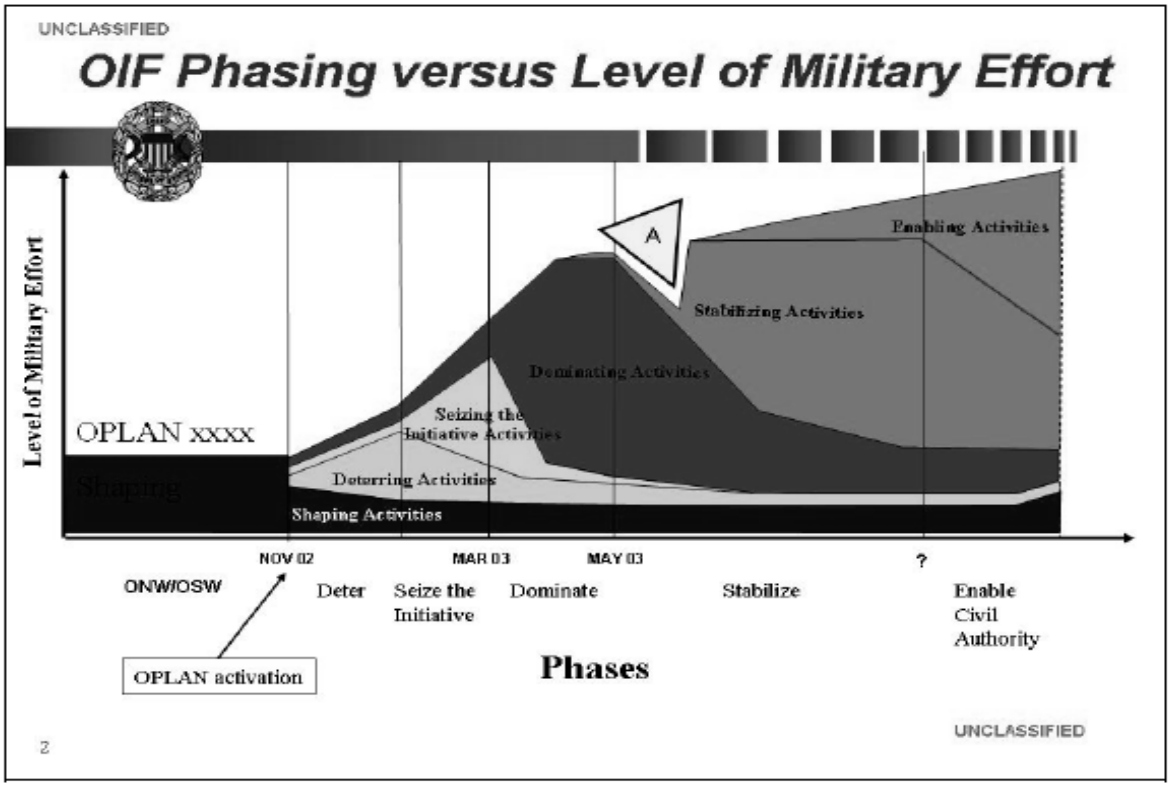



**Figure 1. Campaign Plan Phases Versus Level of Military Effort**
(Johnson, 2008)

Figure 1 presents the unclassified version of OIF phasing in relation to military effort. Commanders and staffs used phasing to assist in determining the level of military effort to support the *dominate phase* in May of 2003 and the additional resources required to shift to the *stabilize phase*. Although the phase-specific activities of the OIF campaign plan are classified, Joint Publication (JP) 5-0, *Joint Operation Planning* (United States Joint Forces Command), provides a broad

overview of each phase and the related activities. The authors begin with Phase I and will highlight the significance of Phase 0 (shaping) in chapter IV.

### 1. Phase I: Deter Phase (December 2002)

By the US Joint Forces Doctrine, the intent of the *deter phase* was to deter objectionable enemy action by demonstrating the capabilities and resolve of the joint force, and was characterized by preparatory actions such as mobilization and initial deployment of military personnel into theater (US Joint Forces Command, 2006). "On December 18, 2002, Pentagon officials released preliminary approval to send 50,000 additional troops to the Persian Gulf region" (Sanger & Preston, 2002). As a result, *deter phase*-related activities centered on the buildup of military hardware and the logistical sequencing of military personnel into theater.

### 2. Phase II: Seize the Initiative Phase (January 2003)

With the initial buildup of weaponry and more than 250,000 military personnel in the region, commanders were poised to seize the initiative by applying the appropriate amount of joint force capabilities (US Joint Forces Command, 2006). Particular examples of joint force capabilities include the following: intelligence, surveillance and reconnaissance assets, tanks, aircraft carriers and strategic airlift such as the US Air Force's C-17 Globemaster III.

### 3. Phase III: Dominate Phase (March 2003)

This phase included full employment joint force capabilities and continued the appropriate sequencing of forces into the operational area (US Joint Forces Command, 2006). The *dominate phase* was characterized by dominating and controlling the operational environment through a combination of conventional, unconventional, information and stability operations (US Joint Forces Command, 2006). An example of dominating and controlling the operational environment culminated on March 19, 2003, when US and coalition forces launched "shock and awe." As a result, 21 days later Saddam Hussein was removed from power.

### 4. Phase IV: Stabilize Phase (April 2003 – December 2005)

Saddam Hussein's removal from power marked the end of the *dominate phase* and the beginning of the *stabilize phase*. Without a fully functional, legitimate civil governing authority present, the joint force was required to perform limited local governance (US Joint Forces Command, 2006). On April 16, 2003, the Commanding General of United States Army Central Command, General Tommy Franks, issued an order establishing the Coalitional Provisional Authority to temporarily exercise powers of government for Iraq (Special Inspector General for Iraq Reconstruction, 2006). This required the joint force to integrate the efforts of other supporting/contributing multinational, intergovernmental, and non-governmental organizations to assist in the provision of basic services and security to the population (US Joint Forces Command, 2006).

### 5. Phase V: Enable Civil Authority Phase (Jan 2006 – Present)

The late December 2005 democratic election of Iraq's 275-member National Assembly marked the beginning of a functional government and the start of the *enabling civil authority phase*. This phase was predominantly (and still is) characterized by the joint force supporting the legitimate civil governance in theater (US Joint Forces Command, 2006). The *enabling civil authority phase* activities include support for political, economic, and security capacity building and rebuilding of the country's infrastructure. An example of joint force support to capacity building culminated in the summer of 2006 when joint and coalition forces provided support to Operation Together Forward I—one of the first operations led by Iraqi security forces to restore security in some of Baghdad's most violent neighborhoods.

## C. Lines of Operation

As commanders envisioned the operational design for OIF, they used several lines of operations (LOOs) to visualize the intended progress of the joint force towards achieving operational and strategic objectives (US Joint Forces Command, 2006).

> LOOs define the orientation of the force in time, space and purpose in relation to an adversary or objective. Normally, joint operations require commanders to synchronize activities along multiple and complementary LOOs working through a series of strategic and operational objectives to attain the military end state. (US Joint Forces Command, 2006, pp. IV-19)

Figure 2 presents four sample logical LOOs: diplomatic, informational, military, and economic; all of which must be synchronized throughout all phases of the campaign plan to achieve the broader national strategic objectives. For example, in the figure below, the red-dotted arrows illustrate the importance of synchronizing the LOOs to achieve the National Strategic Objectives.

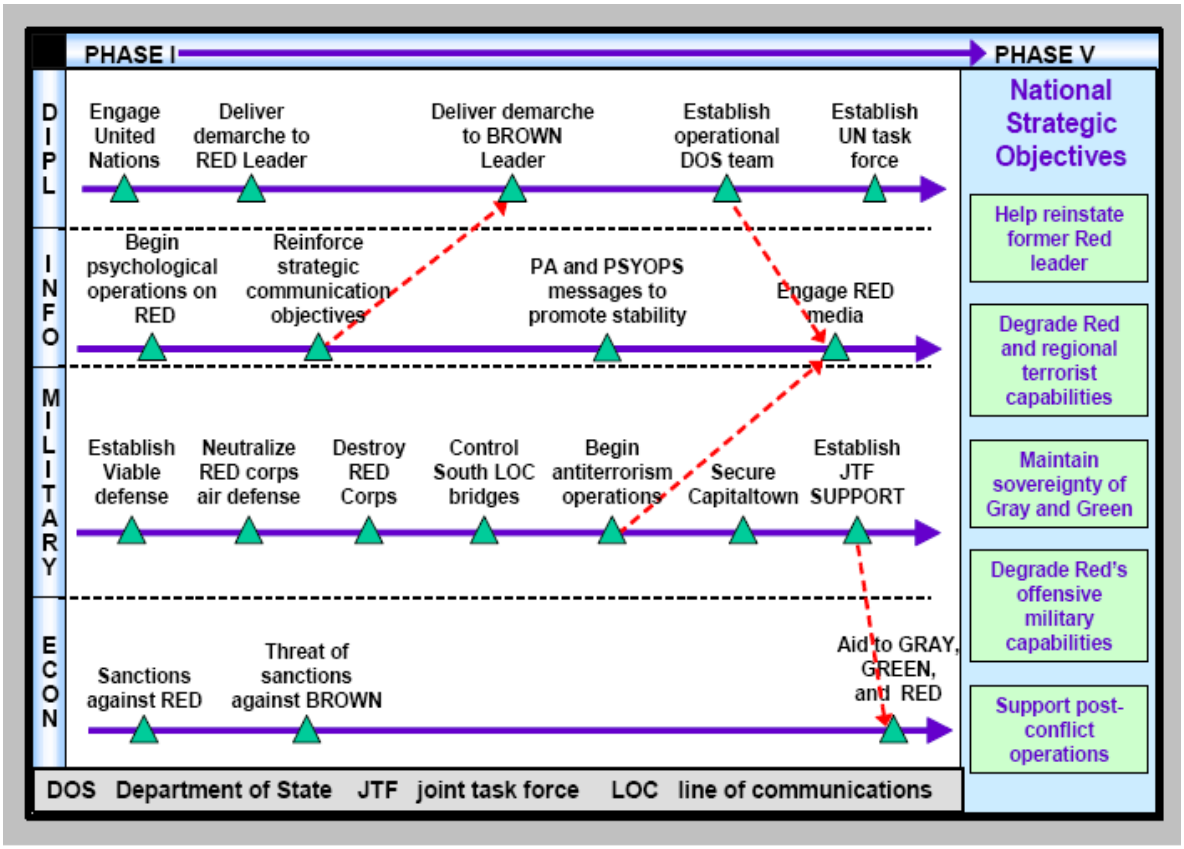



**Figure 2. Sample Logical Lines of Operations**
(US Joint Forces Command, 2006, pp. IV-22)

According to the former Commanding General of the Multinational Corps-Iraq (MNC-I), Major General Peter W. Chiarelli, "operations [for OIF] maintained orientation on a well-founded campaign plan balanced along five integrated

conceptual LOOs. […]. Each moving incrementally and cumulatively toward decisively accomplishing the goal of shifting Baghdad away from instability [to stability]" (Chiarelli & Michaelis, 2005, p. 1).

The first LOO is the military line of operation (MLO), in which the MNC-I provides command and control (C2) of kinetic operations throughout Iraq (MNC-I Mission Statement, 2006). The second LOO is the transitional line of operation (TLO). Along this LOO, the Multinational Security Transition Corps-Iraq (MNSTC-I commonly called "min-sticky") is responsible for organizing, training, equipping, and mentoring ISF throughout the country of Iraq (MNSTC-I Mission Statement, 2006). The third LOO is the reconstruction line of operation (RLO), where the United States Army Corps of Engineers Gulf Region Division (USACE GRD) provides quality and sustainable, responsive, full spectrum engineering services to support civil and military construction in Iraq (GRD Mission Statement, 2006). The fourth LOO is the economic line of operation (ELO), wherein the JCC-I/A is charged with providing contract support to the warfighter as well as facilitating economic growth in the Iraqi economy. The fifth is the governance line of operation (GLO), in which the Department of Justice and Department of State share responsibility to assist in local and national governance. The LOOs are linked into the three integrated strategic tracks of the *2005 National Security Strategy for Victory in Iraq* (NSSVI)—political, security, and economic.

The first of these integrated tracks is the political track. The strategic objective of this track is to help the Iraqi people forge a broadly supported national, compact democratic government by isolating enemy elements from those who desire to participate in the democratic process, engaging those outside the political process, and building stable infrastructure and institutions to protect the citizens of Iraq (National Security Council, 2005). The second is the security track, in which the intent is to secure the country while carrying out a campaign to defeat the terrorists and neutralize them by clearing areas of enemy control, holding areas freed from enemy control, and building Iraqi security forces and the capacity of local institutions

to deliver [essential] services" (National Security Council, 2005, p. 8). The third of these integrated tracks is the economic track. "The objective of the economic track is to assist the Iraq government in establishing the foundations for a sound economy with the capacity to deliver essential services by restoring Iraq's infrastructure, reforming Iraq's economy, and building the capacity of Iraq's institutions" (National Security Council, 2005, p. 9).

## D. Joint Contracting Command Iraq/Afghanistan

In order to better support the national strategic objectives of the NSSVI and the ELO within the campaign plan, USCENTCOM issued Fragmentary Order (FRAGO) 09-1117 in November 2006. The FRAGO directed the commanders (including MNFI and Combined Task Force (CTJF-76) to update contracting organizational relationships and unify the contacting effort. Additionally, FRAGO established the following three objectives for the JCC-I/A: "1) Integrate warfighter campaign plans and strategy and achieve effects, 2) Achieve unity of effort and economies of scale that exemplify best business practices, and 3) Create synergy with economic activities in local private and public sectors, serving as a catalyst for economic growth" (US Central Command, 2006).

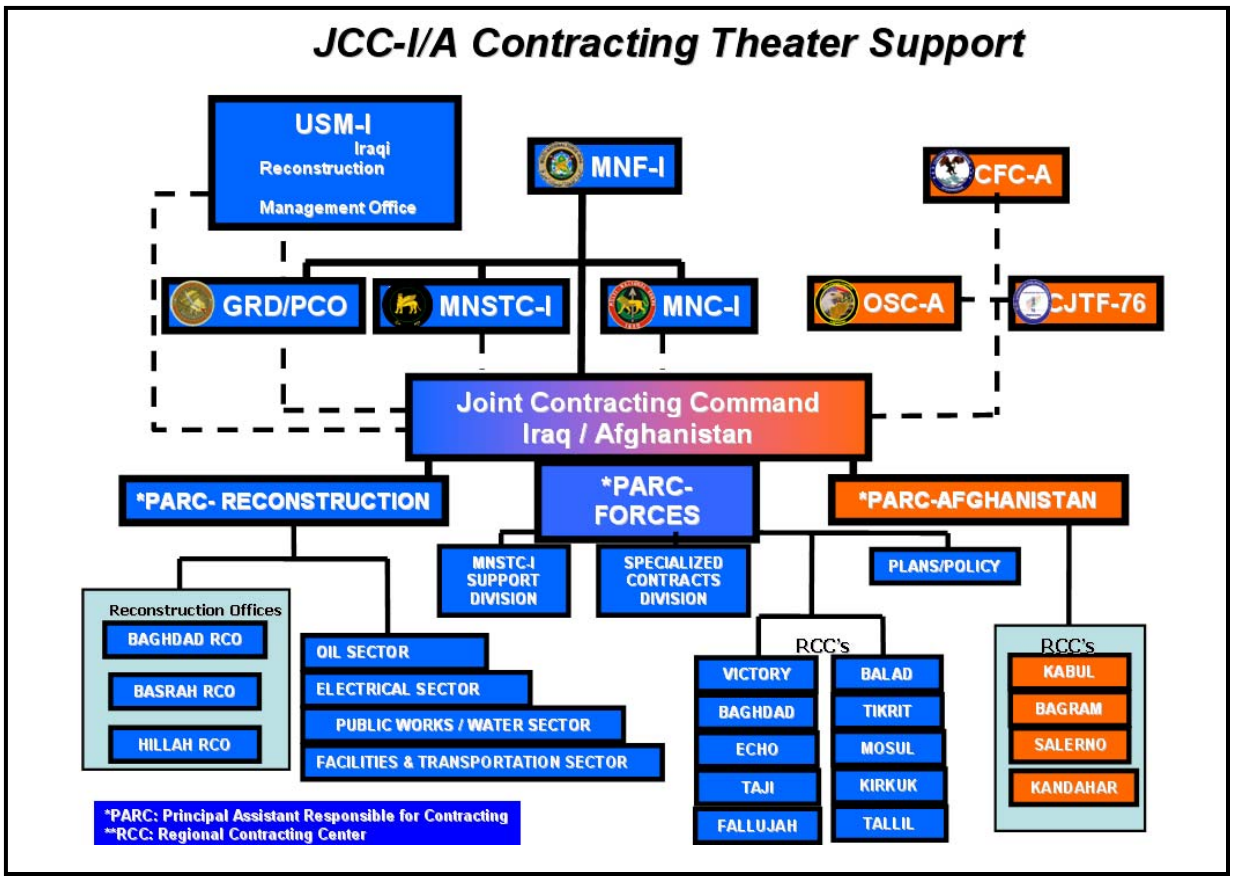



**Figure 3. The JCC-I/A Theater Contracting Support Structure**
(Joint Contracting Command-Iraq/Afghanistan, 2006)

## 1. Organizational Structure

Figure 3 presents the 2006 organizational and theater contracting support for the JCC-I/A. The command is a Major Subordinate Command (MSC) under the MNF-I and provides responsive operational contracting support to the Chiefs of Mission, MNF-I, and CTJF-76 – Afghanistan. The JCC-I/A provides operational (kinetic) contracting support to warfighters through regional contracting centers (RCCs) and reconstruction (post-kinetic) contracting support through reconstruction offices (RCOs).

## 2. Contingency Contracting Officer Resources

In 2006, the JCC-I/A had approximately 165 contingency contracting officer (CCO) resources from the US Army, Navy, Air Force, and Marines, each with

varying degrees of experience. The experience levels ranged from Defense Acquisition Workforce Improvement Act (DAWIA) Acquisition Professional Development Program (APDP) Level I CCOs to APDP Level III CCOs. The DAWIA was signed into law in November 1990 and required the DOD to establish education and training standards (e.g., Levels I, II, and III) for the acquisition workforce.

Although APDP Levels are under the DAWIA, each service has unique TTPs for employing CCOs. For example, the US Air Force typically trains and develops CCOs when airmen and 2nd lieutenants first enter the contracting career field. After two years of training, CCOs are then eligible to deploy in support of contingency operations for a period of 120 to 179 days. Conversely, the Army trains and develops CCOs at the senior captain and major levels, and usually deploys CCOs for 12 to 15 months, most of whom have limited contingency contracting experience. Moreover, Navy and Marine CCOs experience similar variations in training and dwell-times. Service-unique TTPs and variations in dwell-times can produce inefficient joint expeditionary execution. The impact of inefficient joint expeditionary contracting execution will be further examined under previous campaign plan phases in Chapter III.

## E. Effects-based Contracting (EBC)

In June of 2006, the Commanding General of the JCC-I/A pioneered EBC to align tactical contracting efforts in order to support the ELO within the campaign plan. "EBC is getting synergistic effects through the coordination of contracting resources and capabilities in time, space and purpose, in order to support the warfighter" (Delong & Gilbeau, 2007, p. 61). The key tenant of EBC is to insert the CCO early in the planning process, at appropriate locations within the unit's battle rhythm, and from the corps to the battalion level (Delong & Gilbeau, 2007). The JCC-I/A established five key components of the EBC methodology:

1. Developing a concept of support
2. Identifying key players

3. Knowing the warfighters' battle rhythm

4. Ensuring visibility by being in the right planning evolution

5. Having flexibility within the enterprise (Delong & Gilbeau, 2007, p.61)

Although not exhaustive, the following are examples of how the JCC-I/A used the five components of EBC to support the CCDR's broad range of strategic objectives:

## 1. EBC: Operation Together Forward

On June 14, 2006, Prime Minister Nouri al-Maliki announced the launch of Operation Together Forward I (OTFI). OTFI was one of the first operations in which Iraqi security forces were in the lead and joint and coalition partners were in support. One critical component of OTFI was the Baghdad Security Plan (BSP). Under BSP the desired effect for the government of Iraq (GOI) was to increase security and provide essential services to the citizens of Baghdad.

The first step in the EBC methodology for the JCC-I/A was to develop a concept of support. With ISF clearing neighborhoods and buildings along the TLO, post-kinetic reconstruction efforts had to be synchronized to deliver essential services to the residents of Baghdad. These efforts required CCOs to proactively integrate into the warfighters' operational planning evolutions; specifically; in sequencing and phasing. "Part of the art of planning is determining the sequence of activities that accomplish the mission most efficiently" (Department of the Army, 2005, pp. I-16). Figure 4 captures the sequencing of kinetic operations to clear the neighborhoods of Baghdad and categorizes them in terms of *completed*, *started*, and *not started*.

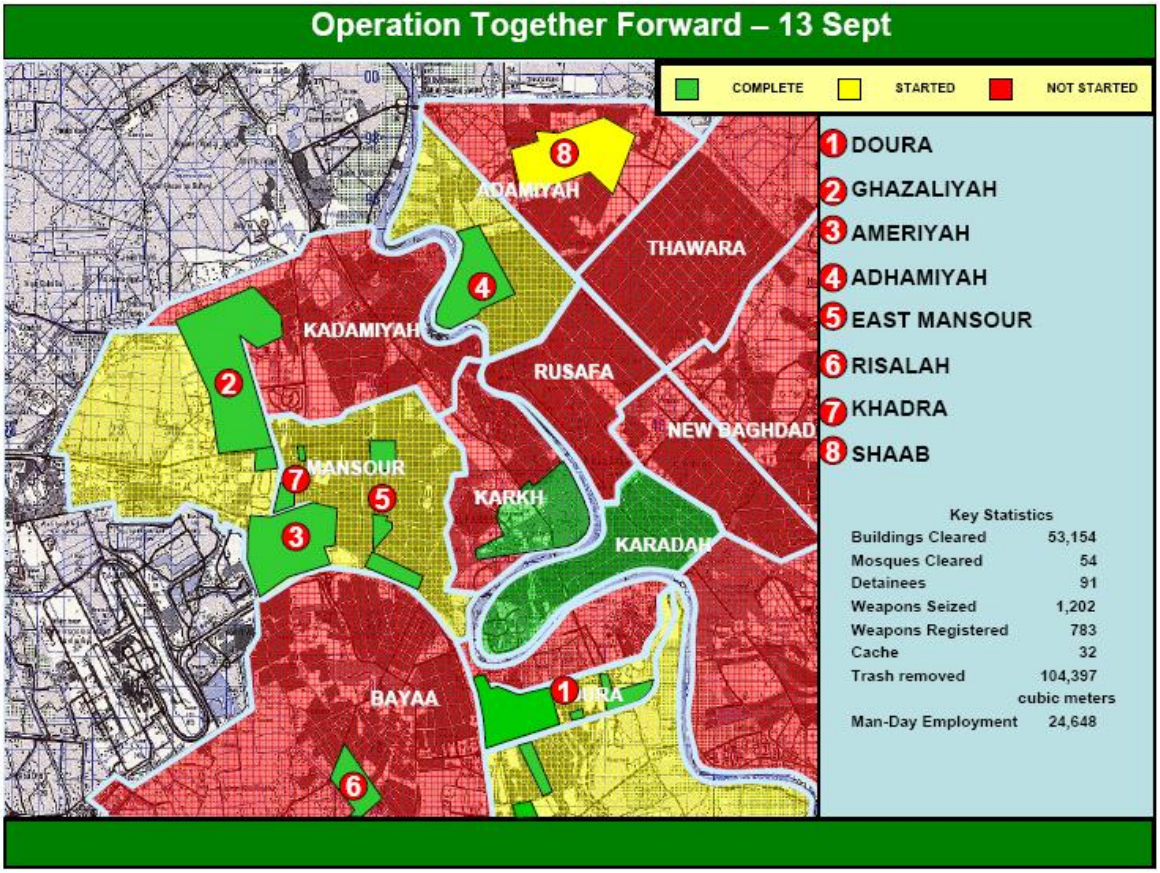
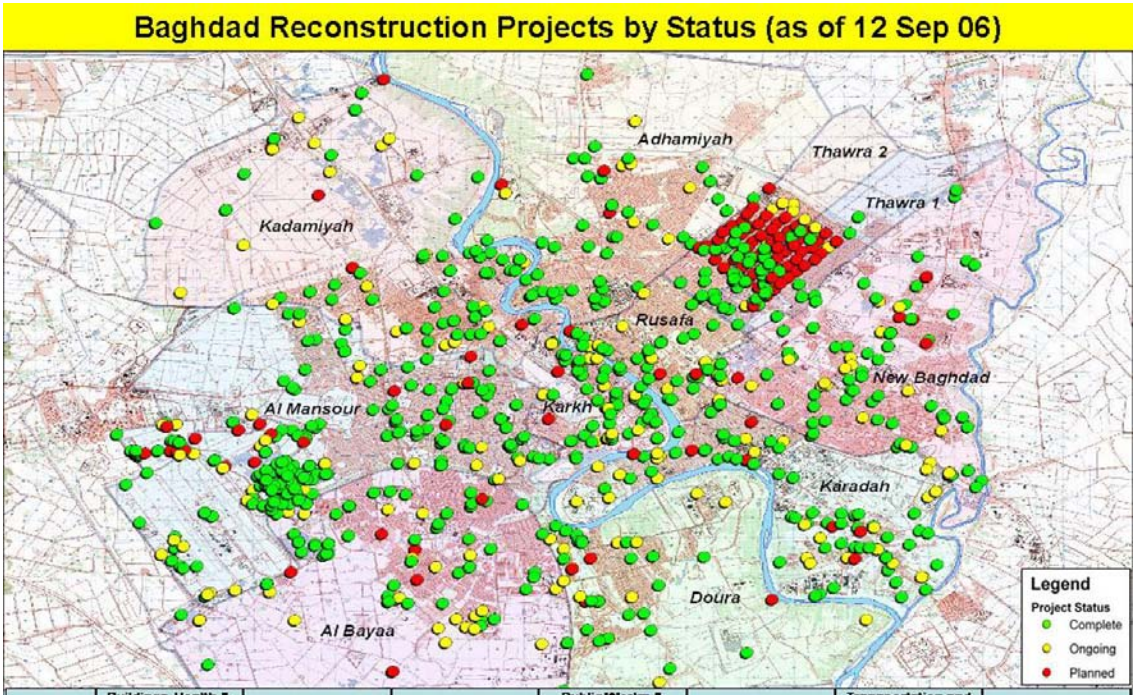



**Figure 4. Multi-national Force Iraq Slide Operation Together Forward**
(Roggio, 2006)

Central to the success of the BSP was the speed at which post-kinetic reconstruction operations followed kinetic operations. For example, when ISF completed the Mansour neighborhoods of E. Mansour, Ameriyah, and Khadra (numbers 3, 5, and 7 in Figure 4), post-kinetic operations such as the delivery of essential services had to immediately follow in order to relieve the suffering of noncombatants. Figure 5 captures the Mansour neighborhood's project status and categorizes them in terms of *complete, ongoing, and planned* in the following areas: buildings, health & education; electricity; public works & water; and security & justice. Of particular note is the effect post-kinetic projects had on host nation (HN) per-day employment numbers in Figure 4 (24,648). HN employment numbers represent constructively employed citizens in some of Baghdad's most violent neighborhoods.




| | Buildings, Health & Education | | Electricity | | MNC-I | | Public Works & Water | | Security & Justice | | Transportation and Communication | | TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Projects | Cost | Projects | Cost | Projects | Cost | Projects | Cost | Projects | Cost | Projects | Cost | Projects | Cost |
| Planned | 87 | $107M | 210 | $764M | 1,078 | $298M | 76 | $235M | 53 | $246M | 45 | $62M | 1,549 | $1,712B |
| Ongoing | 29 | $66M | 122 | $489M | 339 | $154M | 27 | $33M | 11 | $36M | 4 | $27M | 532 | $805M |
| Completed | 58 | $41M | 85 | $256M | 725 | $141M | 44 | $174M | 42 | $210M | 40 | $32M | 994 | $854M |

All IRRF, OMA/MILCON, DFI, CERP by Program Manager: 4 X GRD Sectors, and MNC-I while work type = Recon, MSREC, OMS, CD

**Figure 5. Baghdad Reconstruction Projects by Status**
(Roggio, 2006)

As a part of alignment and synchronization of tactical contracting efforts to support the ELO, the JCC-I/A had to identify key players along their respective LOOs. From the operational level, MNC-I was responsible for the MLO, MNSTC-I was responsible for the TLO and the United States Mission-Iraq and elements of the Department of Justice were responsible for the GLO. Key tactical players were the ground commanders, local provincial leaders, and the Provincial Reconstruction Teams. Established by Secretary Rice on November 11, 2005, "the core PRT mission is helping the provincial governments with: developing a transparent and sustained capability to deliver essential services, promoting increased security and rule of law, promoting political and economic development" (Department of State, Provincial Reconstruction Team Fact Sheet, 2008, p.1).

Knowing the battle rhythm of warfighters is the third component of EBC. "Joint Battle Rhythm is the timing and scheduled presentation of situation reports, briefings, formal collaborative sessions and other required actions during planning and execution" (Duffy, Bordetsky, Blazevich, & Oros, 2004, p.1). At the tactical and operational levels, CCOs from the Principle Assistant Responsible for Contracting-Forces (PARC-F) and other RCCs attended daily and weekly operational briefs in order to synchronize expeditionary contracting support with the warfighters' main effort.

The fourth component of EBC is ensuring visibility by being in the right planning evolution. At the strategic level, the Commanding General of the JCC-I/A, Major General Darryl Scott, attended MNF-I Commanding General's Battle Update Assessment (BUA). The BUA provided strategic situational awareness relative to the strategic objectives of the campaign plan and insight that would require the JCC-I/A's involvement in major operational planning evolutions. This information was then shared with RCCs and PARC-F through the JCC-I/A's internal business processes as they participated in parallel and collaborative planning sessions with the warfighters. Integrating expeditionary contracting at the strategic, operational, and tactical levels was innovative at this time in the sense that it put joint expeditionary contracting in a well-poised, *proactive* position to deliver effects, rather than a *reactive* one under previous campaign plan phases, which produced numerous undesired effects.

The fifth component of EBC is having flexibility within the enterprise. Existing contract vehicles throughout the JCC-I/A were critical elements in the time-definite delivery of essential services to the neighborhoods of Baghdad. For example, after the kinetic operations to clear neighborhoods started, the JCC-I/A, through existing theater-wide contracts, delivered essential services such as water and electricity one to three days after Iraqi security forces completed neighborhood clearing operations.

## 2. EBC: Construction of the Rusafa Law and Order Facility

Another example of EBC execution was the construction of the Rusafa Law and Order Facility.

> On February 28, General David H. Petreus, commanding general of MNF-I issued an order requiring the establishment of a law and order complex in the heart of Baghdad. The purpose of the complex was to help the Government of Iraq (GOI) improve the judiciary in Baghdad and foster an environment of reconciliation throughout Iraq. The GOI's visible exercise of the judicial system would be a key instrument in gaining the trust and confidence. As a condition, judges, witnesses, and other parties involved with the investigative hearings must be protected from anti-GOI attacks and threats. The desired result was the Central Criminal Court of Iraq's ability to hold public investigations and trials in a relatively safe environment. Gaining the capacity to fairly prosecute and house criminals is a key component to the Baghdad Security Plan (Operation Fardh Al-Qanoon). (Delong & Gilbeau, 2007, p. 62)
>
> By using the five components of EBC,
>
> The team constructed the [$22 million dollar] facility faster [26 days] and better than the chief judge had hoped to imagine. As a result, the chief judge decided this complex would not be merely a criminal investigative court, but instead, officially designated the facility as the Central Criminal Court of Iraq. On April 7, 2007, the first arraignment took place as planned and a man held for torture, was remanded for trial. (Delong & Gilbeau, 2007, p. 63)

## 3. EBC: Date Palm Spraying Operations

The last example of EBC execution was spraying operations for Iraq's commercial date palm crop.

> The date palm (Phoenix dactylifera) has provided a source of food and shelter throughout history and is linked culturally and spiritually with Iraq. Iraq dominated the world date market with 75 percent of the exported dates until the late 1970s. This dominance was lost to other competitors as Iraq became involved in wars and trade embargoes were imposed. Dates still remained the second largest industry in Iraq but production was threatened by a large number of pests ranging from arthropods, fungi, nematodes, and phytoplasma. The Dubas bug (Ommatissus lybicus) is considered the number one arthropod pest of date palms in Iraq. The Iraqi Ministry of Agriculture (MOA) had controlled Dubas bugs through the aerial application of ULV pesticides prior to Operation Iraqi Freedom in 2003. Due to the loss of organic agricultural aircraft and security issues, aerial spraying was not done

> in 2004 and 2005. Infestation levels rose causing a significant decrease in date production. It was recognized that it was critical to implement control measures for the Dubas bug to improve the date production. In late 2005, the MOA in conjunction with Multi-National Forces - Iraq (MNF-I) began planning to conduct aerial spraying to control the Dubas bug in date palms in Iraq. This agricultural project was a joint effort lead by the Ministry of Agriculture […]. The result was over 77,000 hectares of date palms were aerially sprayed to control Dubas bugs in Iraq. (Blow, 2006)

The JCC-I/A proactively integrated the warfighters' operational planning cycles and established the contracts to facilitate date palm spraying operations. As a result, spraying operations began less than fourteen days after the JCC-I/A received the requirement. This was significant in that the requirement did not follow the standard serial contracting process in which the warfighter first defines the requirement, receives funding, and then takes the requirement to contracting, but rather as a result of proactive integration the JCC-I/A was involved during the requirements definition phase. The timeliness and equal distribution of the date palm spraying operations to all date palm farmers directly supported the legitimacy of the democratically elected GOI and the strategic objectives of the NSSVI.

## F. Joint Reconstruction Operations Center

From the strategic, operational, and tactical perspectives, senior U.S. and GOI actors used the Joint Reconstruction Operations Center (JROC) for post-kinetic operations transparency. The JCC-I/A integrated the JROC to achieve a common-operating-picture (COP). The COP provided the forum for senior leaders (within each LOO) to assess how their actions affected the others' actions within the battle space, and to a greater extent, how synchronized, individual actions helped to achieve the CCDR's strategic objectives.

## G. Impact on OIF Strategic Objectives

At the end of FY2006, The JCC-I/A obligated $5.7 billion dollars through 26,994 contracting actions. As shown in Figure 6, of the $5.7 billion, $2.2 billion was infused into both Iraq's and Afghanistan's economy.

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# JCC-I/A FY 06 EOY Roll-Up

## Contracting Activity & Economic Stimulus

| JCC I/A | Total Contract Actions FY 2006 | | | | Total Contract Dollars ($M) FY 2006 | | | | Host Nation Contract Actions FY 2006 | | | | Host Nation Contract Dollars ($M) FY 2006 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | JUL | AUG | SEP | Σ FY | JUL | AUG | SEP | Σ FY | JUL | AUG | SEP | Σ FY | JUL | AUG | SEP | Σ FY |
| PARC-F (IRQ) | 1,208 | 1,269 | 1,322 | 13,737 | $170.7 | $364.4 | $374.2 | $1,776.1 | 763 63% | 796 63% | 657 50% | 6,964 51% | $106.0 62% | $119.3 33% | $132.1 35% | $716.0 40% |
| PARC-R (IRQ) | 208 | 224 | 369 | 3,013 | $302.2 | $466.2 | $441.4 | $3,407.9 | 106 51% | 111 50% | 131 36% | 1,147 38% | $240.6 80% | $296.6 64% | $171.6 39% | $1,168.2 34% |
| PARC-A (AFG) | 775 | 916 | 1,223 | 10,244 | $31.5 | $32.2 | $96.8 | $527.9 | 635 82% | 778 85% | 1,059 87% | 7,840 77% | $24.9 79% | $27.7 86% | $68.3 71% | $334.6 63% |
| TOTAL JCC-I/A | 2,191 | 2,409 | 2,914 | 26,994 | $504.4 | $862.8 | $912.4 | $5,711.9 | 1,504 69% | 1,685 70% | 1,847 63% | 15,951 59% | $371.5 74% | $443.6 51% | $372.0 41% | $2,218.8 39% |

**Figure 6. The JCC-I/A FY06 End of Year Economic Stimulus Roll-Up**
(JCC-I/A, 2006)

Moreover, the JCC-I/A reported a significant increase in the number of HN prime contractors and subcontractors during this period, which directly supports the ELO within the campaign plan and the broader, national strategic objectives of the NSSVI *economic track* to establish the foundations for a sound economy.

## H. Summary

This chapter discussed the warfighters' operational framework along with the impact of EBC on the CCDR's strategic objectives under the *enable civil authority phase* of the OIF. EBC methodologies were analyzed through OTFI, the construction of the Rusafa Law and Order Facility, and date palm spraying. Finally, a FY2006 roll-up of the contracting activity and economic stimulus to the Iraqi economy was presented.

Although CCOs with varying degrees of experience under a Joint Contracting Command using EBC methodologies have proved successful, the DOD and CCDRs did not realize the benefits until almost four years after the OIF campaign plan activation in November 2002. These realities leave the authors with two questions: 1) what if CCOs were involved in the operational planning cycles/campaign planning before the activation of the campaign plan? 2) were there opportunities to provide

effects (namely, time-definite delivery of supplies and services under previous phases) prior to the establishment of the JCC-I/A?

In an effort to begin to answer these two questions, the next chapter presents the researchers' observations of joint expeditionary contracting execution under previous campaign plan phases through a review of the *2006 Special Inspector General Report: Lessons Learned in Procurement and Contracting* and the *2007 Report of the Commission on Army Acquisition and Program Management in Expeditionary Operations* (Gansler Report).

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# III. Identification and Analysis of Problems

## A. Introduction

The previous chapter presented the warfighters' operational framework and how, through innovative EBC methodologies, the JCCI-A managed to synchronize tactical contracting efforts to support strategic objectives under the *enabling civil authority phase*. This chapter presents the researchers' observations of joint expeditionary contracting execution under previous campaign plan phases through a review of the *2006 Special Inspector General Report: Lessons Learned in Procurement and Contracting* and the *2007 Gansler Commission Report: Urgent Reform Required: Army Expeditionary Contracting*. Specifically, this chapter will further detail the variations in business processes, service-unique TTPs for employing CCOs, and kinetic and post-kinetic requirements definitions; this will thereby expose the fertile ground of opportunities for both warfighters and CCOs to deliver effects, namely time-definite supplies and services throughout all phases of future operation/campaign plans. Following this chapter, the researchers will introduce the framework of the Joint Effects-based Contracting Execution System (JEBCES) and the researcher-proposed Phased–based Acquisition Capability (PBAC) as an enabling concept for warfighters and CCOs to accomplish this.

## B. OIF Phase—Procurement-funding Timeline Analysis

### 1. 2006 SIGIR Lessons Learned Report with Researchers' Observations

The Special Inspector General for Iraq Reconstruction (SIGIR) is the successor to the Coalition Provisional Authority Office of Inspector General (CPA-IG). The organization was created in October 2004 by a congressional amendment; the amendment provided authority for SIGIR to continue the oversight that CPA-IG had established for Iraq reconstruction programs and operations. Specifically, SIGIR is mandated with oversight responsibility of the use, and potential misuse, of the Iraq Relief and Reconstruction Fund (IRRF) and all obligations, expenditures,

and revenues associated with reconstruction and rehabilitation activities in Iraq. Stuart W. Bowen, Jr., who had served as the CPA-IG since January 20, 2004, continues as the Special Inspector General for Iraq Reconstruction. SIGIR reports administratively to the Secretaries of State and Defense. In addition, SIGIR provides quarterly and semi-annual reports directly to the US Congress (SIGIR, 2006).

Figure 7 illustrates the evolution of the contracting experience in Iraq and highlights the misalignment of major procurement authorities and funding streams with campaign plan phases. For example, during the shift of joint forces from the *dominate phase* to the *stabilize phase* of OIF, Congress established the Iraq Relief and Reconstruction Fund to support the rebuilding effort. However, the major contracting authority, namely the Organization for Reconstruction and Humanitarian Assistance (ORHA),

> suffered from a lack of qualified contracting personnel in theater as it prepared to provide post-war relief and reconstruction services in Iraq. To remedy this shortfall, the Defense Contract Management Agency (DCMA) transferred three military contracting officers to support ORHA […] however, the Principal Assistant Responsible for Contracting [for] USCENTCOM, refused to warrant these DCMA contracting officers. (SIGIR, p. 21)

Variations in business processes such as warranting CCOs to provide contract support during the critical transition from the *dominate phase* to the *stabilize phase* provided for numerous undesired effects not only in the *stabilize phase* but throughout subsequent campaign plan phases.

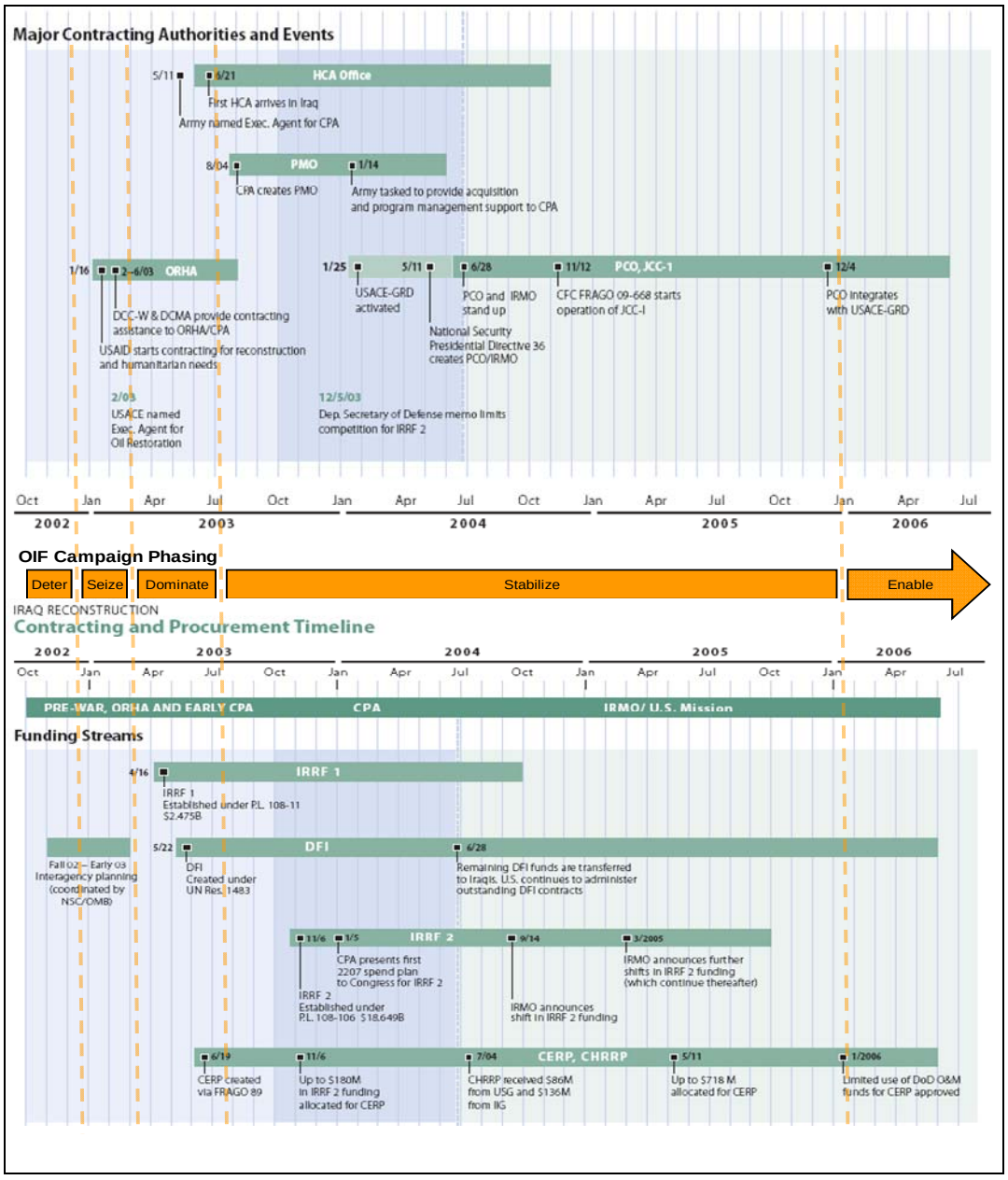



**Figure 7. Major Contracting Authorities–OIF Campaign Phasing-Funding Stream**
(Adapted From: SIGIR, 2006, p. 12)

### a. Phase I: Deter/Closed - Planning/November 2002

As previously discussed in Chapter I, *deter phase*-related activities centered on requirements for "initial deployments into theater, force protection and logistics requirements to support the concept of operations" (US Joint Forces Command,

2006, pp. IV-37). Unfortunately, during this same period, "[contracting] agencies were individually directed to initiate planning for relief and reconstruction activities in Iraq [and with] limited coordination of contracting and procurement among these organizations" (SIGIR, 2006, p. 14). SIGIR goes on to explain, "The lack of coordination was attributable, in part, to the fact that most of the activities were classified" (SIGIR, 2006, p.14).

The authors contend that other "part" of the lack of coordination is based upon the capabilities-based framework from which the warfighter plans contingency operations.

> The Joint Strategic Capabilities Plan (JSCP) provides strategic guidance, including apportionment of resources (for planning purposes) to the [CCDR] and the Chiefs of the Services, to accomplish assigned strategic planning tasks, based on current military *capabilities*, for the next 18 to 24 months. The JSCP provides a coherent framework for capabilities-based operations planning. (Defense Acquisition University, 2005)

For example, the 1st Calvary Division, from the operational planner's perspective, brings inherent *capabilities* such as tanks, aviation, infantry, and the like into operational planning cycles. In particular, the 1st Cavalry Division bring these capabilities as they relate to the logistics of phasing in the Cavalry Division into the COCOM's area of operation and the ability for the capability to deliver time-definite effects such as the need for F15s to destroy enemy communication towers seven hours before the start of the ground assault by M1 Abrams. Of particular note with such capabilities is that the warfighter organizes, trains, and equips around them and is therefore able to develop standard TTPs for them. Unfortunately for contingency contracting, no such standard capability exists. If joint expeditionary contracting support was reframed and developed into a capability with the same precision for time-definite delivery of bombs on target to take out enemy communications towers, CCOs could have had a seat at the *deter phase* planning table.

### b. Phase II: Seize/Early CPA/January 2003

Given the *seize the initiative phase*-related activities of building up military hardware and sequencing joint force capabilities into the AOR to prepare for the *dominate phase*, CCOs and warfighters alike could have benefited from a contracting capability while planning for the *dominate phase.* For example, logistics and time-definite delivery of supplies and services could have been part of the capabilities package to deal with the requirements of the *post-dominate phase (stabilize phase).* However, according to SIGIR:

> Between January and March 2003, the U.S. relaxed confidentiality restrictions on pre-war relief and reconstruction planning. More agencies then became more openly involved in planning for post-war Iraq. Financial and acquisition [contingency contracting] personnel, however, were largely still not included in the interagency planning process. (SIGIR, 2006, p. 19)

SIGIR further explains "Their [financial and acquisition personnel] absence contributed to the limited interagency cooperation on, and centralized support for contracting during this period, which had deleterious effects upon subsequent phases of the [reconstruction] program" (SIGIR, 2006, p. 19).

### c. Phase III: Dominate/ORHA/March 2003

Shortly after "shock and awe" and Saddam Hussein's removal from power, contracting efforts focused on the awarding and allocating of funds appropriated by Congress to support the rebuilding of Iraq. However, [during the short time period to begin reconstruction operations to deliver essential services] SIGIR explains that, unfortunately, "the [reconstruction] effort engaged multiple US government agencies possessing overlapping jurisdictions and diverse capacities. These agencies applied a variety of approaches to similar contracting requirements resulting in methodologies and outcomes that occasionally came into conflict" (SIGIR, 2006, p. 10). Variations in contracting approaches [TTPs] to similar contracting requirements prevented efficient contracting execution.

### d. Phase IV: Stabilize/Later CPA/April 2003-December 2005

During the period-critical shift from the *dominate phase* to the *stabilize phase*, there were significant consternations in funding streams management for OIF, which

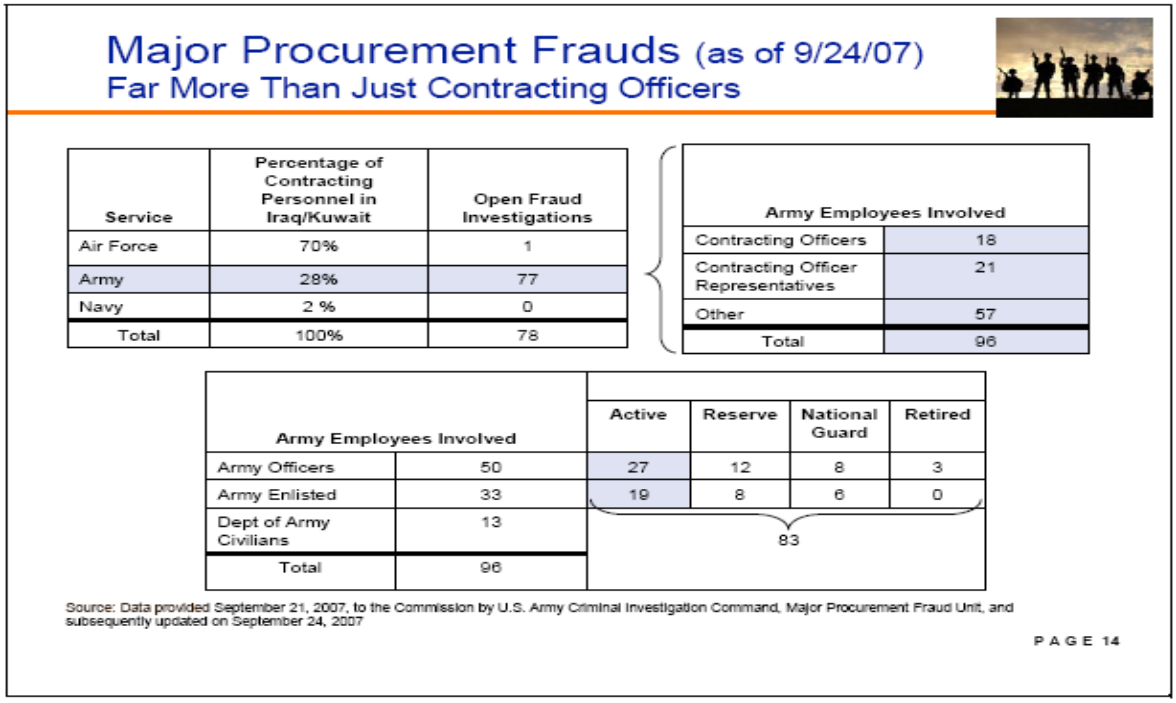
directly limited contracting execution  For example, during the shift from humanitarian relief to large-scale reconstruction (post-kinetic) operations, contracting efforts focused on the awarding and allocating of the $18.4 billion appropriated by Congress, namely the Iraq Relief and Reconstruction Fund 2 (IRRF 2).  Although Congress appropriated IRRF 2 funds in November of 2003, the money did not become available to the executing agencies until the Office of Management and Budget apportioned it.  OMB released the funds in January 2004 [two months after the appropriation], which caused delays in facilitating the conditions to stabilize the AOR (SIGIR, 2006).

### 2. 2007 Gansler Commission Report with Researchers' Observations

Another revealing report on contingency (or expeditionary) contracting is the 2007 Gansler Commission Report.  The Secretary of the Army established an independent Commission headed by Dr. Jacques Gansler, former Under Secretary of Defense (Acquisition  Technology & Logistics), to assess Army Acquisition and Program Management in expeditionary operations (Commission on Army Acquisition and Program Management in Expeditionary Operations, 2007).  The reports focused on four major areas affecting expeditionary contracting operations:  education and training, tools, policy, and organization.

#### a. Education and Training

The Gansler Commission Report outlined several deficiencies in the education and training of contracting personnel such as "the Army does not recognize the importance of contracting nor has it enabled responsive acquisitions and sustainment of expeditionary operation.  Moreover, the report suggests this, in part, has contributed to the fraud, waste and abuse occurring in-theater by Army personnel" (See Figure 8) (Commission, 2007, p. 29). The Gansler Commission Report also found that the "expeditionary environment requires more trained and experienced military officers and non-commissioned officers.  Only 56 percent of the military officers and 53 percent of the civilians in the contracting career field are certified for current positions" (Commission, 2007, p. 2).



## Major Procurement Frauds (as of 9/24/07)
### Far More Than Just Contracting Officers

| Service | Percentage of Contracting Personnel in Iraq/Kuwait | Open Fraud Investigations |
|---|---|---|
| Air Force | 70% | 1 |
| Army | 28% | 77 |
| Navy | 2 % | 0 |
| Total | 100% | 78 |

| Army Employees Involved | |
|---|---|
| Contracting Officers | 18 |
| Contracting Officer Representatives | 21 |
| Other | 57 |
| Total | 96 |

| Army Employees Involved | | Active | Reserve | National Guard | Retired |
|---|---|---|---|---|---|
| Army Officers | 50 | 27 | 12 | 8 | 3 |
| Army Enlisted | 33 | 19 | 8 | 6 | 0 |
| Dept of Army Civilians | 13 | 83 | | | |
| Total | 96 | | | | |

Source: Data provided September 21, 2007, to the Commission by U.S. Army Criminal Investigation Command, Major Procurement Fraud Unit, and subsequently updated on September 24, 2007

PAGE 14

**Figure 8. Major Procurement Fraud**
(Commission, 2007, p. 94)

The lack of sufficient education and training is leading to inefficient contracting and a waste of taxpayers' dollars in contingency environments; where there is no time to get every action approved before it is awarded. The Defense Acquisition University (DAU) needs to focus on training the civilian and military acquisition, logistics, and contracting workforce as needed for expeditionary operations (Commission, 2007). The DAU should train like the military fights, i.e., "JFCOM and Army training exercises must stress rapid acquisition, logistics, and contracting in expeditionary operations" (Commission, 2007, p. 54).

**b. Tools**

Tools and training need to be provided to overall contracting activities in expeditionary operations (Commission, 2007). The tools should be provided for "overall contracting activities in expeditionary operations so we do not repeat mistakes of Operations Iraqi Freedom/Operation Enduring Freedom" (Commission, 2007, p. 103). An internal, automated contract documentation system needs to be created (SIGIR, 2006). As a result of not having a standardized documentation

system, a series of ad-hoc systems were developed, and these systems proved inconsistent (SIGIR, 2006). Therefore, a deployable contracting and procurement system should be developed before deploying and should be tested to ensure it can be used effectively in contingency environments (SIGIR, 2006).

> The DOD needs to develop an acquisition information system that will enable geographic CCDRs to integrate and coordinate the essential acquisition information from all contracting organizations throughout its respective AOR. Through the integration of this information within an AOR, COCOMs can conduct spend analyses to better understand what is actually procured in their respective geographical areas. (D'Angelo, Houglan, & Ruckwardt, 2007, p. 89)

There needs to be a system put in place to capture the contracting lessons learned from both OIF and OEF. The lessons learned should be incorporated into military leadership schools and the Center for Army Lessons Learned, as well as other branch equivalents (Commission, 2007). In order for the military to learn from past mistakes, they need to know what those mistakes are, and use them in current training before they deploy to the battlefield. By failing to capture lessons learned the military is destined to continue making the same mistakes over and over again.

### c. Policy

A key element for future success as outlined in the Gansler Commission Report is to obtain legislative, regulatory, and policy assistance to enable contracting effectiveness in expeditionary operations (Commission on Army Acquisition, 2007). The lack of a common policy or regulation for contingency operations presents many problems. "Throughout the Iraq experience there has been debate about whether the *FAR* provides appropriate flexibilities for the fast-paced contracting required in conflict/post-conflict environments like Iraq" (SIGIR, 2006, p. 102). An Expeditionary FAR (EFAR) is needed to define allowable, expedient actions that will be used in training and provided to the field (Commission, 2007). A standard policy would allow all agencies to execute contracting with a common rulebook. Currently, each agency in the country is performing contracting functions in accordance with its own policies and individual forms and terms. This causes confusion among those

administering the contracts from different agencies, and thus the contractors have to learn a new contracting system each time they get a contract with a different agency.

"A single set of simple contracting regulations and procedures that provide uniform direction to all contracting personnel in contingency environments" needs to be established (SIGIR, 2006, p. 95). "The contracting process in Iraq reconstructions suffered from the variety of regulations applied by diverse agencies, which caused inconsistencies and inefficiencies that inhibited management and oversight" (SIGIR, 2006, p. 95). The lack of clarity among the US Army procurement organizations as to the applicability of the *Defense Federal Acquisition Regulation Supplement* (*DFARS*) definition requirements for task orders issued under IDIQ contracts diminishes visibility and cost control over contractor costs by the government. The incomplete nature of the content in the contract clauses database does not support the Defense Federal Acquisition Regulations requirement for ensuring that definitization occurs in a timely manner and subsequently cost controls are implemented.

Current contingency contracts have been incrementally funded, causing a greater workload and inefficient operations. The LOGCAP contract had 141 incremental funding contract modifications in FY06. "Funds metered out incrementally cause unnecessary and non-value-added workload to an already overloaded contracting workforce" (Commission, 2007, p. 25). If a more efficient funding steam were available, the JCC-I/A would be able to negotiate better deals on contracts (Commission, 2007).

Cost containment is essential for contract administration relating to funds control over the IRRF appropriation (SIGIR, 2006). The US interagency community and private industry did not have adequate pre-war planning. Contracting and procurement personnel should be included in all planning stages for operations (SIGIR, 2006). There were no contracting personnel involved in the initial stages for OIF or OEF. "Contracting plays a central role in the execution of contingency operations, and thus it must be part of the pre-deployment planning process.

Whether for stabilization or reconstruction operations, contracting officials help provide an accurate picture of the resources necessary to carry out the mission" (SIGIR, 2006, p. 98).

### d. Organization

As outlined by the Gansler Commission, a key element to future success is to restructure contracting organization and restore responsibility to facilitate contracting and contract management in expeditionary and continental US operations (Commission, 2007). The Army currently does not treat contracting as a core capability; it is treated as an operational and institutional side issue (Commission, 2007). "Viewing contingency contacting as a tactical function can inundate the battlefield with excessive contracting units" (D'Angelo et al, 2007, p. 2). This can lead to the inefficient use of contracting resources, supply disruptions, ineffective support to the strategic objectives, and several policy and contract accountability chains (D'Angelo et al., 2007).

The Army needs a single Army contracting command responsible for making contracting an "Army, high quality, and core competence" (Commission, 2007, p. 101). Currently, there are multiple commands that have responsibility for contracting, none of which have the responsibility to synchronize contracting below the Army Secretariat Level (Commission, 2007). In the current environment, commanders and contractors have to deal with multiple HCAs/PARCs on policy issues (Commission, 2007). A DoD-wide agency needs to be developed so that it can be a center of excellence for expeditionary contract management. The agency should have the responsibility for all contract management for expeditionary contracting (Commission, 2007).

There needs to be a "uniformed, rapidly-deployable expeditionary contracting force and standing Joint Contracting Command" (Commission, 2007, p. 105). Essential contracting and procurement roles and responsibilities need to be clearly defined and communicated to all participating agencies (SIGIR, 2006). "The failure to define contracting and procurement roles and responsibilities at the outset of the

Iraq endeavor resulted in a subsequently fragmented system, thus foreclosing opportunities for collaborations and coordination on contracting and procurement strategies" (SIGIR, 2006, p. 94).

## C. Summary

This chapter reviewed two recent and relevant reports that traced the evolution of the United States government's contracting experience in Iraq and underscored systemic variations in the joint expeditionary contracting process. In summary, both the 2006 SIGIR Report and the 2007 Gansler Report provided major recommendations to improve joint expeditionary contacting execution. These recommendations are provided in Table 1.

| 2006 SIGIR Recommendations: |
|---|
| 1. Explore the creation of an enhanced contingency *FAR.* |
| 2. Pursue the institutionalization of special contracting programs. |
| **3. Include contracting staff at all phases of planning for contingency operations.** |
| **4. Create a deployable reserve corps of contracting personnel who are trained to execute rapid relief and reconstruction contracting during contingency operations.** |
| 5. Develop and implement information systems for managing contracting and procurement in contingency operations. |
| **6. Pre-compete and pre-qualify a diverse pool of contractors with specialized reconstruction areas.** |
| **2007 Gansler Commission Recommendations:** |
| 1. Increase stature, quantity, and career development of contracting personnel, both military and civilian (especially for expeditionary operations). |
| **2. Restructure the contracting organization and restore responsibility to facilitate contracting and contract management in expeditionary and CONUS operations.** |
| **3. Provide training and tools for overall contracting activities in expeditionary contracting operations.** |
| 4. Obtain legislative, regulatory, and policy assistance to enable contracting effectiveness in expeditionary operations. |

**Table 1. 2006 SIGIR and 2007 Gansler Commission Report Recommendations**
(SIGIR, 2006; Commission, 2007)

In the next chapter the researchers will incorporate selected recommendations (bold in Table 1) from the 2006 SIGIR Report and the 2007 Gansler Commission Report, as well as observations, into an iterative, problem-solving approach called the systems engineering process (SEP). Through the SEP, the authors will establish the framework for the Joint Effects-based Contracting Execution System and, within the JEBCES, present a Phase-based Acquisition Capability (PBAC) as an enabling concept for future joint effects-based contracting execution.

# IV. Joint Effects-Based Contracting Execution System (JEBCES)

## A. Introduction

Chapter II of this project highlighted the strategic significance of a Joint Contracting Command (JCC), using innovative EBC methodologies to support the CCDR's campaign plan. For example, after kinetic forces cleared entrenched neighborhoods in Baghdad, EBC methodologies enabled post-kinetic operations to follow shortly thereafter. Conversely, Chapter III identified the negative impacts caused by variations in requirements definitions, service-unique TTPs, and inefficient business processes. Against the backdrop of Chapters II and III, this chapter presents the framework for the Joint Effects-based Contracting Execution System (JEBCES), and within the JEBCES, a researcher-proposed Phased-based Acquisition Capability (PBAC). Before presenting PBAC, it is essential to understand the desired effects of each joint EBC contracting execution stakeholder. The authors used the Department of Defense Systems Management College's (DSMC's) 2001 *Fundamentals of Systems Engineering* to accomplish this, thereby establishing the general framework for the JEBCES.

## B. Overview of JEBCES Systems Engineering

Systems engineering (SE) provides the framework for an integrated composite of people, products, and processes to deliver a capability to meet the customer's need. DSMC defines the systems engineering process (SEP) as "an iterative problem-solving process to transform needs and requirements into a set of system products" (Defense Systems Management College, 2001). In other words, the SEP seeks to identify the requirements of each member's internal processes to facilitate the development of the external capability to meet the warfighters' needs. Figure 9 presents the SEP, which consists of process inputs, requirements analysis,

functional analysis, synthesis, systems analysis and control, and finally, process outputs.

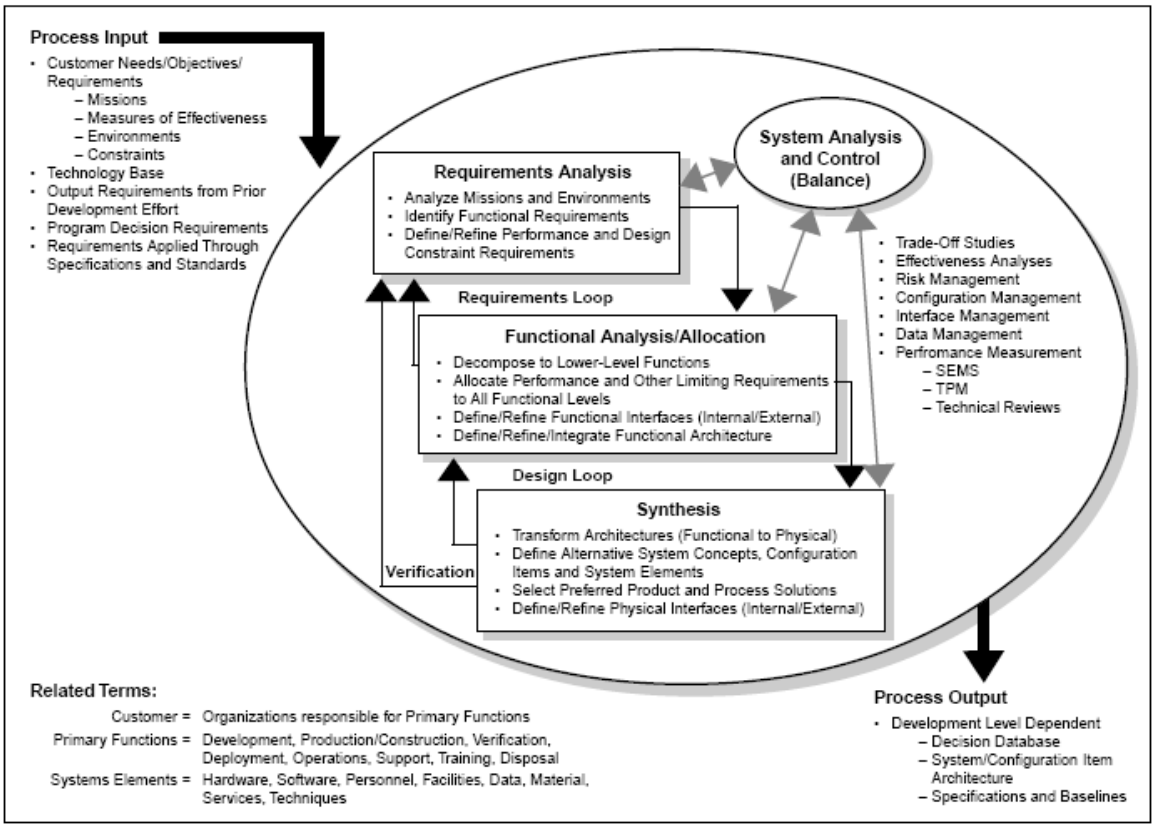



**Figure 9. Systems Engineering Processes**
(Defense Systems Management College, 2001)

## C. Process Inputs (Stakeholder Requirements)

From CCOs with varying degrees of experience and service-unique TTPs for employment to offices like the SIGIR in Chapter III that audit the contracting process, there are numerous stakeholders within the joint expeditionary contracting environment; each with different needs (or desired effects) from the same contracting execution system. For example, comptrollers and budgeting officers desire transparency and accountability of all US-appropriated funds throughout the operation. Although not exhaustive, Table 2 presents the authors' stakeholder analysis of the JEBCES and its desired effects—conditions to meet its internal

people, product, or process requirements in order to facilitate the stakeholders' direct support of strategic objectives.

| Stakeholder | Desired Effects |
|---|---|
| CCDR | Time-definite contracting to support strategic objectives of campaign plan and visibility of CAF within Combined Joint Area of Operation (CJOA) |
| Warfighter | Menu of defined requirements during contingencies |
| JCC Commander | Trained and equipped joint expeditionary contracting force |
| Contingency Contracting Officers | Standard TTPs |
| Comptrollers | Effective budget execution |
| Contracting Officer Representatives | Standard TTPs to enable responsive contract oversight |
| Contractors Assisting the Force | Payment for goods and services and phase-based demand data to support inventories and forecasting of goods and services |
| Host Nation | Transparent and transferable procurement processes |
| Defense Contract Management Agency | Complete contract files to conduct contract administration |
| Non-Governmental Organizations | Coordination and synchronization of contracting activities |
| U.S. Interagency Community | Interoperablity |
| Congress | Appropriations Transparency and Accountability |

**Table 2. JEBCES Stakeholders and Desired Effects**

### 1. Combatant Commander: EBC and CAF Accountability

As seen in Table 2, the CCDR requires time-definite delivery of supplies and services to the strategic objectives of the campaign plan. Additionally, the CCDR needs in-theater visibility of Contractors Assisting the Force (CAF). According to the GAO, "the DOD's use of contractors to provide supplies and services to deployed U.S. Forces has grown significantly to the extent the force in Iraq is composed of approximately 143,000 military personnel and 149,000 contractor personnel" (Kohn & Hutton, 2008, p.1). "The presence of contractor personnel—hired by various government agencies, and business—has created significant challenges for the

United States in overseeing contractors and managing the combat zone" (Congressional Budget Office, 2008, p.15).

### 2. Warfighter: Defined Requirements

For the warfighter, the greatest need during joint expeditionary contracting operations is requirements definition. Given the high operations tempo during such phases like the *dominate phase* and the supporting role requirements in subsequent phases, the last thing the warfighter needs is another process to maneuver through while maneuvering through the battle space to accomplish mission objectives. Moreover, events such as Reliefs in Place and Transfers of Authority (RIP/TOA) further exacerbate the requirements definition process—specifically, when incoming units attempt to identify when service contracts such as internal security or dining facility services expire. RIP/TOA is the process in which one military unit replaces another.

### 3. JCC Commander: Trained and Equipped CCOs

The JCC Commander requires trained and equipped CCOs to deliver efficient and effective contract support for kinetic and post-kinetic reconstruction operations. Gansler highlights the fact that some joint CCOs do not have the required training and skills when they arrive in theater (Commission on Army Acquisition, 2007).

### 4. CCOs: Standard TTPs

As previously discussed in Chapter III, the Commission on Army Acquisition recommended tools and training for overall contracting activities in expeditionary contracting operations. Given the level of contracting complexity within the CJOA, CCOs need standard TTPs to absorb variations in US interagency-specific and inter-service approaches to training, contracting execution methodologies, and business processes in order to enable agile and responsive contract support.

## 5. Comptrollers: Transparency and Accountability

> "Comptrollers manage the planning, programming, budgeting, and execution systems at all levels. They provide resource advice and guidance to commanders, activity chiefs, and other Army leaders. Comptrollers issue instructions for, develop, and prepare the program and budget. They also monitor execution of the program/budget at all resource management echelons" (Functional Area 45 Comptroller's Development Guide, 2003, p. 1).

In joint expeditionary contracting environments, the desired effect is effective budget execution and appropriations transparency.

## 6. Contracting Officer Representatives: Standard TTPs

Contracting Officer Representatives (CORs) serve as the CCO's eyes and ears within the CJOA and need standard TTPs to ensure effective contracting oversight. This is further highlighted under a recent amendment to section 2333 of title 10 U.S.C, in which it "directed joint policies for contingency contracting provide for the training of military personnel outside the acquisition workforce who are expected to have acquisition responsibilities including contracts or contractors during combat operations, post-conflict operations, and contingency operations" (Kohn & Hutton, 2008 p. 2).

## 7. Contractors Assisting the Force (CAF): Predictability

From logistical support to life-support services such as billeting and dining facilities, CAF provide a broad array of services to military operations. During most contingency operations, CAF are typically not paid on time and need better payment processes, mechanisms to quantify risk, and well-defined requirements. According to a group of contractors interviewed by the Gansler Commission:

> [B]ecause of uncertainties that exist in high threat environments like Iraq, they are pressured to price their risk into firm-fixed price contracts rather than being permitted to propose under cost-reimbursement terms and conditions that would make it easier to factor risk into the price. Government contracting officials who believe traditional practices in requirements planning, contract award, and contract management processes have often found, after it is too late to recover, that a traditional approach is ill-suited for the non-traditional environment. (Commission on Army Acquisition, 2007, p. 38)

## 8. Host Nation: Transferable EBC Processes

Based on the existing model within the JCC-I/A, selected CCOs are embedded in executing ministries of the GOI (such as the ministry of the interior) to coach, mentor, and teach fundamental procurement processes. This is particularly important under both the *stabilize phase* and *the enable civil authority phase* of future campaign plans, when the joint force is in a supporting role to newly established democratic governments. As the HN matures, the procurement processes need to be easily transferable.

## 9. DCMA: Standard TTPs

The DCMA provides administrative support to CCOs for large dollar, complex contracts. This includes the Air Force's Air Force Civilian Augmentation Program and the Army's LOGCAP contract, which provide base operations support and construction services during the initial phases of a deployment. In light of the significant logistical role the DCMA has in administering theater-wide logistical support, it is imperative that they be involved in requirements definition and operational planning. The desired effect for the DCMA is for CCOs to minimize variations in contracting processes and for better contract file management. For example, in Chapter III, SIGIR identified a number of missing contract files during an inspection. In this instance, standard TTPs would provide the framework for the solution.

## 10. NGOs: Independence and Synchronization

NGOs require the independence as well as the ability to synchronize efforts within the AOR. However, under unique circumstances NGOs may have to rely on the CAF to assist in relief operations. For example, as kinetic forces move throughout the *stabilize phase* and post-kinetic operations begin, NGOs may have to use existing CAF-supplied transportation services to bring in humanitarian relief.

### 11. International Community: Interoperability

The desired effect of the international community is interoperability. For example, during the 2006 International Security Assistance Force TOA in Afghanistan, International Security Assistance Forces had difficulties integrating their funding streams into existing procurement systems.

### 12. Congress: Transparency & Accountability

The United States Congress requires transparency and accountability of appropriated funds during contingency operations. For example:

> When the U.S. Congress appropriated funds for Iraq relief and reconstruction, it also passed legislation to create a specialized Inspector General to provide accountability for the use of these funds. Public Law 108-106, *the Emergency Supplemental Appropriations Act for Defense and for the Reconstruction of Iraq and Afghanistan, 2004*, appropriated $18 billion for the Iraq Relief and Reconstruction Fund (IRRF). (SIGIR, 2006, p. 46)

## D. Requirements Analysis

After conducting a stakeholder analysis, the next step in the SEP, as seen in Figure 9, is to analyze the process inputs. "Requirements analysis is used to develop functional and performance requirements; that is, customer requirements are translated into a set of requirements that define what the system must do and how well it must perform" (Defense Systems Management College, 2001, p. 31). A recent requirement, from a policy standpoint, is found in section 2333 of title 10 US Code, where Congress directed the Secretary of Defense, in consultation with the Chairman of the Joint Chiefs of Staff, to develop joint policies by April 2008 for requirements definition, contingency program management, and contingency contracting during combat and post-combat operations.

Additionally, in January 2008, the National Authorization Act for Fiscal Year 2008 amended section 2333 to add a new subparagraph directing that

> these joint policies provide training of personnel outside of the acquisition workforce who are expected to have acquisition responsibilities including

oversight of contract or contractors during combat operations and post-conflict operations and contingency operations. (Kohn & Hutton, 2008, p. 2)

At the operational and tactical levels, the system must address the stakeholders' desired effects as identified in Table 2. With this information, the researchers conclude the JEBCES must:

- Standardize a high percentage of kinetic and post-kinetic requirements for warfighters
- Provide the framework for contingency program management
- Optimize the CAF's supply chain
- Utilize contracting resources efficiently
- Manage contracting knowledge throughout all phases of the campaign plan
- Absorb variations in requirements definitions and CCO contract execution methodologies

## E. Functional Analysis

Given the stakeholders' desired effects and requirements analysis, the next step is to conduct a functional analysis. Figure 10 presents the authors' functional analysis of the JEBCES.

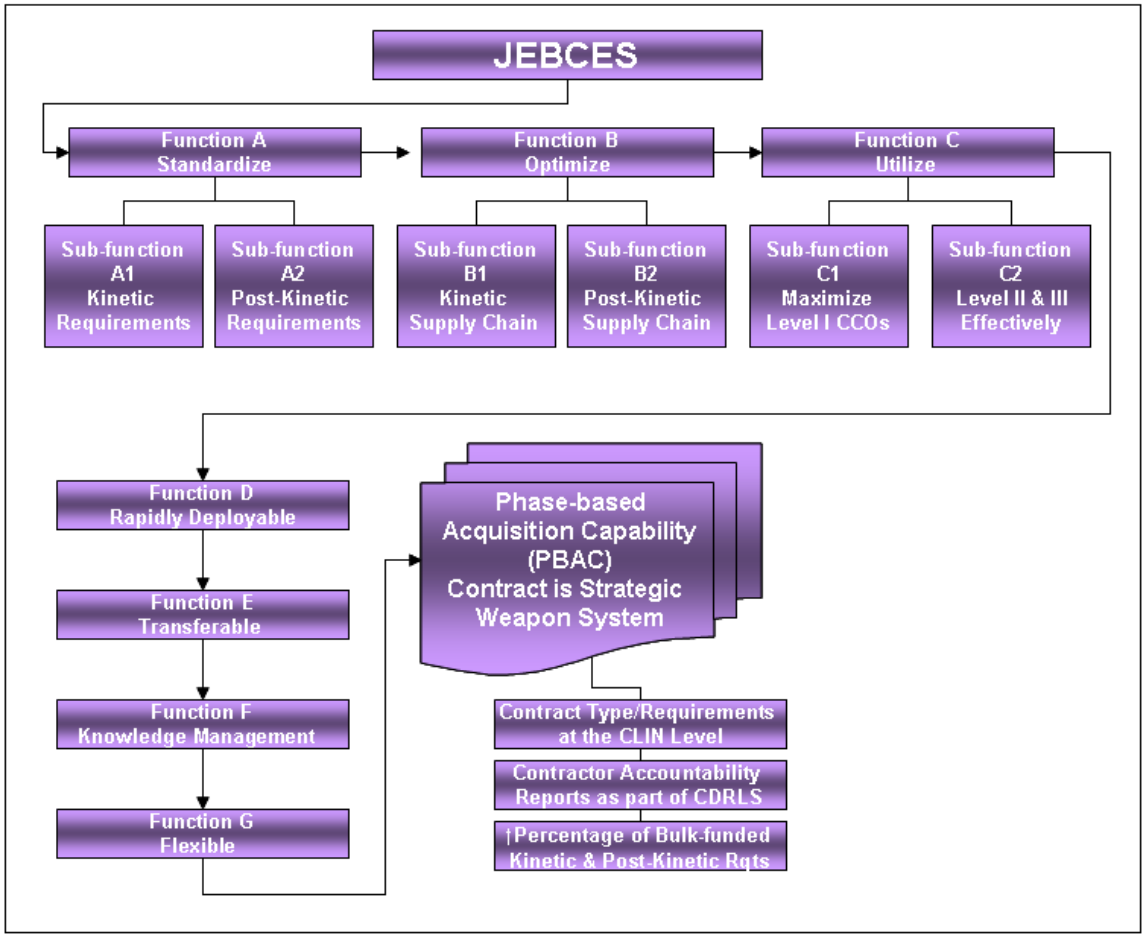



**Figure 10. JEBCES Functional Analysis**

### 1. Function A: Standardize Requirements

Based on the requirements of both the warfighter and CCOs, the JEBCES must standardize a high percentage of both kinetic and post-kinetic requirements to provide a common set of requirements throughout all phases of future campaign plans.

### 2. Function B: Optimize CAF's Supply Chain

In order to optimize the CAF's supply chain, the JEBCES must provide CAF with phase-based demand data. CAF can use this to forecast demand and provide the DOD with significant savings through economies of scale. As relayed in their recent thesis, D'Angelo, Houghlan and Ruckwardt (2007) propose a strategic

approach to contingency contracting, wherein the DOD can identify strategic sourcing opportunities using Kraljic's Model. The model categorizes the enterprise-wide spend categories based on strategic importance.

### 3. Function C: Utilize CCO Resources Efficiently

As a major system function, the JEBCES must utilize CCOs efficiently. Yoder's (2004) CCO optimization model suggests that the current acquisition and contracting community is providing the COCOM sub-optimized, ad-hoc contracted theater support (Yoder, 2005). In Figure 11, Yoder explains his model this way:

> The Yoder three-tier calls for the cultivation and utilization of senior officers and civilians with sufficient education, joint qualification, multi-discipline DAWIA certifications and other professional qualifications to perform at the highest integrative-planning and execution levels. At the highest level, the Integrative Planner and Executor (IPE) is the essential and critical lynch-pin allowing for the development of a comprehensive Contingency Contracting Support Plan that integrates contracting with the broader theater objectives in the Operation Plan (Yoder, 2004, p. 20).

The Yoder three-tier model (YTTM) recommends employment of contingency contracting officers as listed in Figure 11 below. As described in the "Yoder three-tier model, each tier performs unique functions, requires specific education, developed skill sets, and unique personnel and manpower characteristics" (Yoder, 2004, p. 24). This model maximizes effectiveness and efficiency of theater contingency contracting by assigning the appropriate level of training and experience to the position assigned, and will be the catalyst for the CCO utilization rates in Chapter V.

| Model Tier Level & Model Title | Functions/Education/Rank | Highlights and Drawbacks |
|---|---|---|
| Ordering Officer – Tier One | • Basic ordering<br>• Some simplified acquisitions<br>• Training: DAU CON 234<br>• DAWIA Certified CON Level I or II<br>• Junior to mid-enlisted, junior officers, GS-7 to GS-9 1102 series civilians | • Simple buys<br>• Little integration<br>• No operational planning<br>• No broad liaison functions |
| Leveraging Contracting Officer – Tier Two | • Leverages to local economy<br>• Reduces "pushed" material support<br>• Training/education: DAU CON 234, recommended higher education<br>• DAWIA Certified CON Level II or III<br>• Senior enlisted, junior to mid-grade officers, GS-11+ 1102 series civilians | • Better local operational planning<br>• Some integration<br>• More capability for the operational commander<br>• No planned theater integration<br>• No broad liaison functions<br>• May perform to optimize local operations at the detriment to theater ops |
| Integrated Planner and Executor (IPE) – Tier Three | • Highest level of planning and integration – joint<br>• Linked/integrated with J-4 and J-5<br>• Creates and executes OPLAN CCO strategy<br>• Provides direction to tier two and one<br>• Links operations strategically to theater objectives of COCOM<br>• Education: Master's degree or higher and JPME Phase I and II<br>• DAWIA Certified CON Level III and other DAWIA disciplines (LOG, ACQ, FIN, etc)<br>• Senior officers (O-6+), senior civilians, GS-13+ or SES | • Performs operational and theater analysis, integrates results into OPLAN<br>• Link between CCDR and OPLAN to all theater contracting operations<br>• Coordinates theater objectives with best approach to contracted support<br>• Can achieve broader national security goals through effective distribution of national assets<br>• Includes planning, communication, coordination, and exercising with NGO and PVO in theater |

**Figure 11. Yoder Three-tier Model for Contingency Contracting Operations**
(Yoder, 2004)

### 4. Function D: Rapidly Deployable

Another function of the JEBCES is to be rapidly deployable. A major recommendation of the SIGIR Report is to

> develop deployable contracting and procurement systems before mobilizing for post-conflict efforts and test that they can effectively be implemented in contingency situations. After reconstruction operations began in Iraq, contracting entities developed ad-hoc operating systems and procedures for monitoring contracts and maintaining contracting and procurement histories; this limited contracting efficiency and led to inconsistent documentation of contracting actions, (SIGIR, 2006, p. 95)

### 5. Function E: Transferable

Under the enable civil authority phase of OIF, JCC-I/A CCOs are embedded with the host nation to coach, mentor, and teach procurement processes. The authors contend that a transferable procurement capability would be a viable solution to previous experiences during the 2004 transition to the interim Iraq government. Of grave concern for the CAF during this period was the ability of the interim Iraqi government to receive and administer contracts funded and executed under DOD procurement processes.

### 6. Function F: Manage EBC Knowledge Base

Institutional knowledge of the pre, during, and post-operational contracting environment is often lost during CCO turnovers, and is further exacerbated by the service-unique dwell-time requirements. For example, US Army CCOs have up to a one-year dwell-time requirement, while the US Air Force standard deployment time is six months. The JEBCES must provide a common repository of corporate knowledge to incoming CCOs regarding strategic objectives, market conditions and after-action reports.

### 7. Function G: Flexible

Given the dynamic nature of the operational environment as it relates to kinetic and post-kinetic requirements, the JEBCES must absorb variations on the

requirements side and the execution side. Moreover, it should expand and contract throughout all phases of the campaign plan.

## F. Design Synthesis for Phased-based Acquisition Capability (PBAC)

The final step in the SEP is the design synthesis. "Design synthesis is the process of defining the product item in terms of the physical and software elements, which together make up and define the item" (Defense Systems Management College, 2001, p. 32). Given the complex stakeholder requirements and the above functional analysis, the authors adopted the United States Army's contracting methodology for LOGCAP and USSOCOM IWSSP wherein a single contract with multiple contract line item (CLIN) "types" (cost and fixed price) supports the warfighter throughout the contingency as well as the weapon system for the remainder of its lifecycle. Instead of establishing separate contracts for each modification of the major weapon system, multiple CLINs within the existing sustainment contract allow the business arrangement to expand and to contract based on requirements definition and program risk. Moreover, it provides transparency into funding streams at the deliver order level. Similarly, a PBAC with multiple CLIN types expands and contracts from the initial mobilization efforts during the *deter phase* to the transition of procurement processes in the *enable civil authority* phase—conceptually, the lifecycle of the operation.

### 1. Rapid Acquisition Capability

As a means of standardizing CCO execution methodologies,

> Section 811 of the FY 2005 National Defense Authorization Act grants the Secretary of Defense limited rapid acquisition authority to acquire goods and services during combat emergencies. Also Title 10, Section 2304 outlines the use of Indefinite Delivery/Indefinite Quantity task orders, sealed bidding, certain actions, and set aside procurements under section 8(a) of the Small Business Act as examples of ways to expedite the delivery of goods and services during combat operations. (Congressional Research Service Report, 2008, p. 7)

In their model, the authors proposed pre-competed, pre-awarded, multiple-award indefinite delivery contracts.

## 2. OIF FY07 Demand Data

In order to establish a standard baseline of kinetic and post-kinetic operational requirements for the PBAC, the researchers grouped the FY07 requirements data from the current Joint Contingency Contracting System (JCCS) into 45 categories using the guidance of the RAND Corporation Report titled *Analyzing Contingency Contracting Purchases for Operation Iraqi Freedom (*Table 1, Appendix 1). The JCC-I/A executed over 37,000 contracting actions, totaling more than $5.3 billion in FY07. Figure 12 presents FY07 requirements by purchase category.

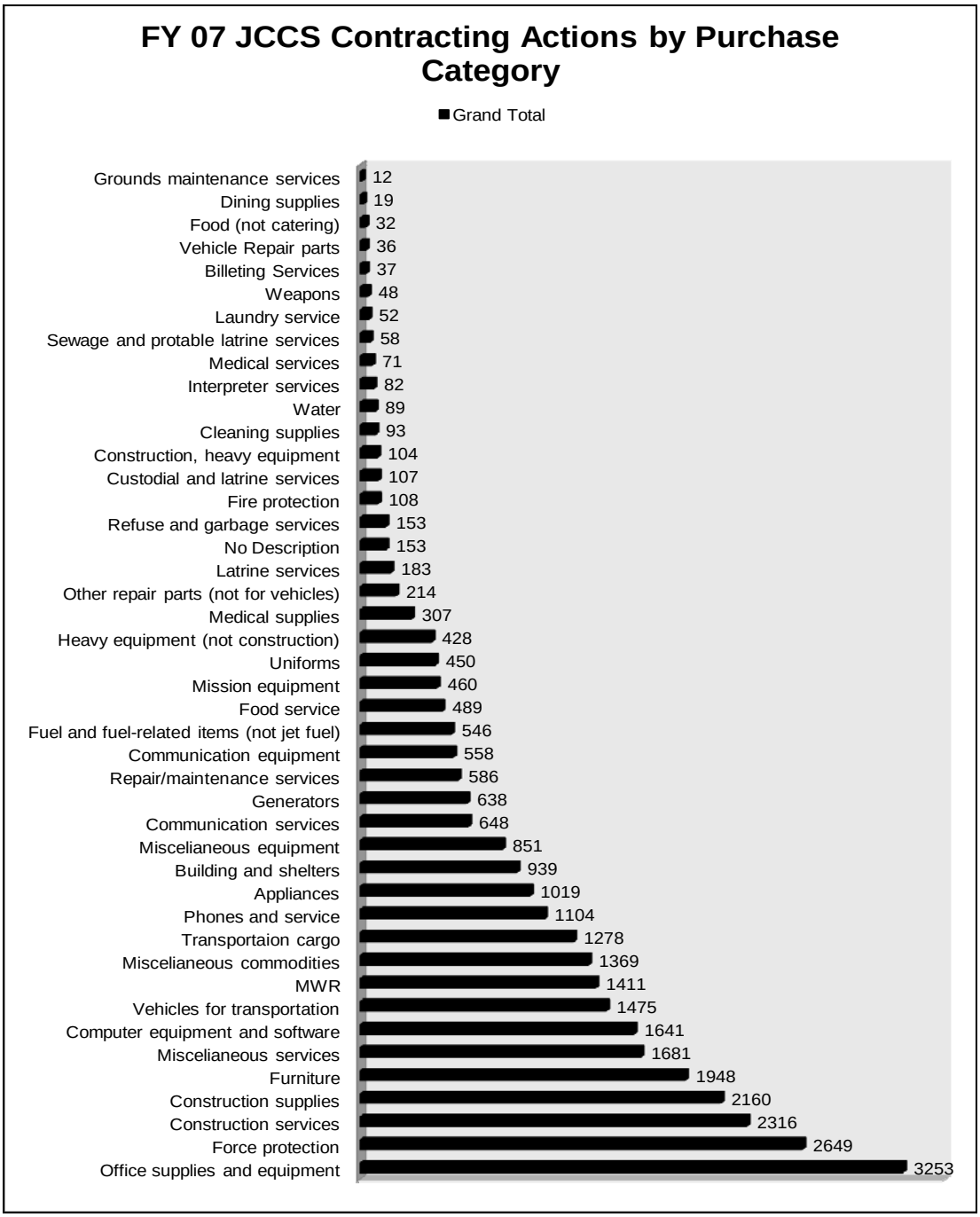



**Figure 12. FY07 JCCS Contracting Actions by Purchase Category**
(Purchasing Categories Adapted From: RAND, 2008)

The data from the JCCS was categorized according to the definitions and breakdowns of the RAND report categories in Appendix 2. Included in the table is a sampling of the types of descriptions that were used by contracting officers in the

description field of the JCCS. Once the JCCS data was categorized, it was then grouped into four basic categories: major construction, minor construction, commodities, and service. These will serve as the kinetic and post-kinetic requirements baseline for the simulation and modeling in Chapter V.

### 3. Bulk Funded Approach

In an effort to align funding with the phase-related activities, the Federal Acquisition Regulation (FAR) provides for bulk funding:

> Use bulk funding to the maximum extent practicable. Bulk funding is a system whereby the contracting officer receives authorization from a fiscal and accounting officer to obligate funds on purchase documents against a specified lump sum of funds reserved for the purpose for a specified period of time rather than obtaining individual obligational authority on each purchase document. Bulk funding is particularly appropriate if numerous purchases using the same type of funds are to be made during a given period (FAR 13.101(4)).

If kinetic and post-kinetic requirements were baselined, the DOD could bulk-fund a high degree of common kinetic and post-kinetic requirements. For example, of the more than 30,000 contracting actions in Figure 12, 3,253 were for office supplies and equipment. Given level of demand, budget officers and warfighters could use this information to standardize office supplies into well-defined requirements and forecast them for future operations.

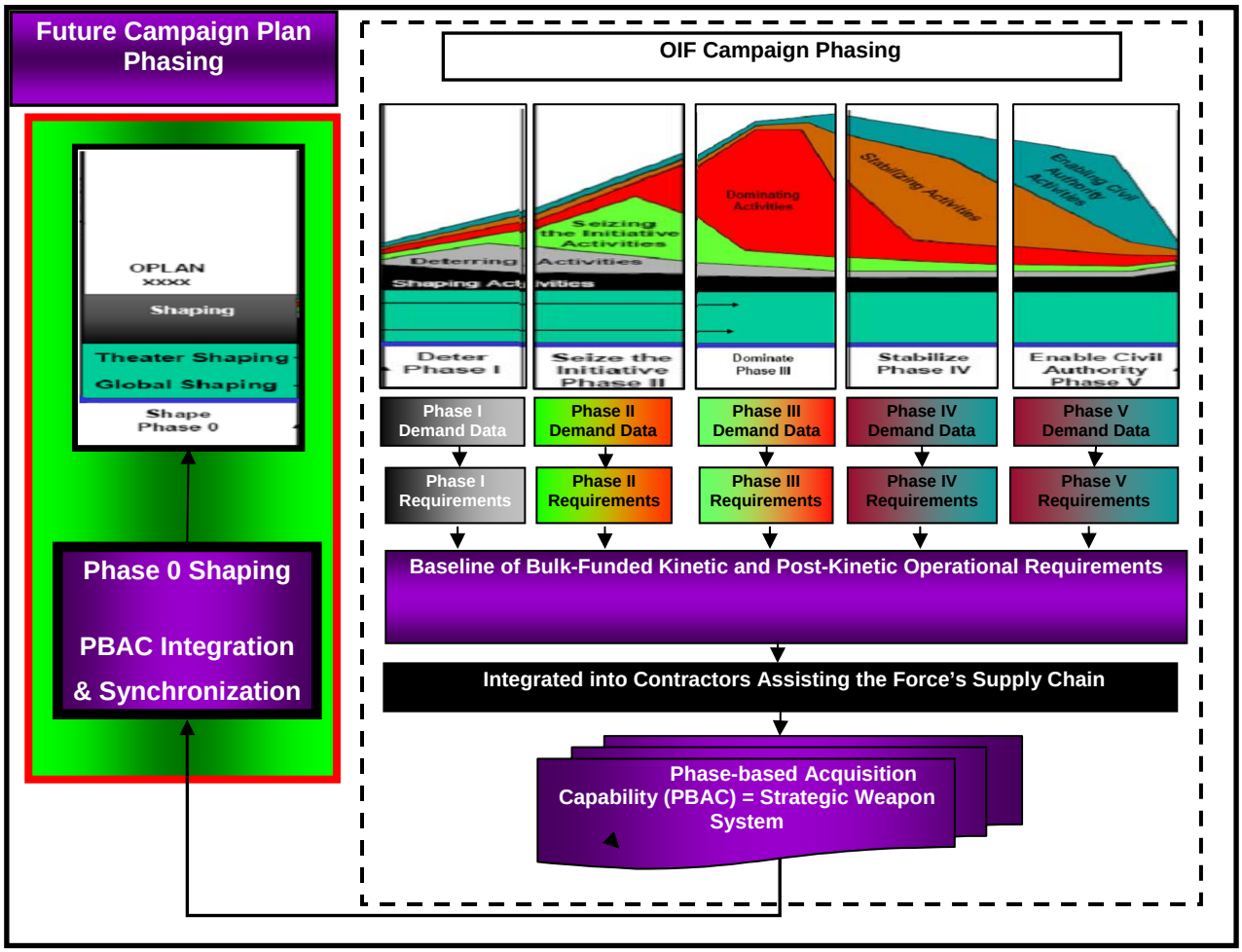



**Figure 13. Phased-based Acquisition Capability**
(Phases Adapted From: JP, 5-0, Joint Operation Planning, 2006)

### 4. Phase 0 Shaping: Integration and Synchronization

Figure 13 illustrates the methodology from which to establish, integrate and synchronize the PBAC into the *shaping phase* (Phase 0). Conceptually, phase-based demand data would flow into a "JCCS-like" system, which can provide insight to bulk-funding opportunities as well as a present a high percentage of uniformed requirements definitions to warfighters. CAF could then use this (phase-based demand/requirements data) to forecast and optimize inventories to support subsequent phases of the operation. Armed with this data and pre-competed, pre-awarded rapid acquisition capabilities such as multiple-award task orders or delivery

order contracts, future CCOs could enter the *shape phase* (Phase 0) with a PBAC where both military and interagency coordination for contingency operations begin.

## G. Summary

In this chapter, the authors applied the fundamentals of the SEP to develop the intellectual framework for the JEBCES and the enabling capability, PBAC. Requirements analysis provided the reader with insight as to how different stakeholders have various requirements from the same effects-based contracting execution system. After the requirements analysis, functional analysis identified how the JEBCES must function relative to the complex needs of each stakeholder, and yet still provide effects within the CJOA. The next chapter will model and simulate a PBAC under the conditions of the *enable civil authority phase* (Phase IV) of the OIF campaign plan.

# V. PBAC Modeling and Simulation

## A. Introduction

The previous chapter introduced the framework for the JEBCES and within the system proposed a Phased-based Acquisition Capability (PBAC). This chapter presents simulation and modeling of a PBAC by modeling the framework in which computer software replicates a real system to allow users the ability to analyze changes to current operations without having to make actual changes to the real system. The use of simulation and modeling provides flexibility to the user by allowing statistical analysis of alternative scenarios in real-time, thus saving time and money. Manufacturers successfully use simulation and modeling software to identify potential efficiencies hidden in undiscovered bottlenecks and wasteful processes (Model Performance, 2003). In this chapter, the authors used Arena *10.0 Forward Business Solutions* (simulation and modeling software) by Rockwell Software, Inc., to demonstrate how a PBAC provides uniformity and efficiency within a joint expeditionary contracting environment. The model demonstrates how total time-in-system and CCO utilization can be improved through the use of a PBAC.

In Table 4, the authors focused on two key elements in the joint expeditionary contracting environment to demonstrate the efficiencies of the PBAC: the total time-in-system for a purchase request (PR) and utilization rates of CCOs. Total time-in-system represents the amount of time it takes from the time the PR enters the acquisition process (through the field ordering officer, the Department of Finance, the Joint Acquisition Review Board (JARB), or the contracting office) to the time the contract is awarded. The utilization rates measure the efficiency of different levels of CCOs within the contracting process.

## B. Assumptions

The following assumptions were made for the PBAC model:

- Staffing levels of all resources used in the model will remain constant during the period of conflict.
- Uniformed kinetic and post-kinetic requirements are defined, forecasted and bulk funded.
- There is a sufficient vendor base to satisfy all the contractual requirements.
- CCOs will be proficient at the skill level assigned within the Yoder three-tier model (YTTM).
- Scenarios were based on 165 CCOs working 15-17 hours per day, seven days per week.

## C. Data Analysis

### 1. Data Origin

The data the authors used for generating the distribution for use in the model is from the Joint Contracting Center Iraq/Afghanistan contract database. The Joint Contingency Contracting System (JCCS) was developed to meet the needs of tracking contracting actions and to be used as a management tool to allocate command resources. The original tool was a Microsoft Access database that was distributed to each of the contracting centers throughout the theater. This was then modified by each of the contracting centers to meet their individual needs. The contracting centers then sent copies of the data at the end of each month; these copies were then modified to a standard format from which the data was mined for reports as necessary. The basic structure was used to develop a Structured Query Language (SQL) database in conjunction with the Business Transformation Agency (BTA), which used a standard format for all contracting centers. The JCCS required that all data fields be completed and that the JCC I/A set command polices requiring time frames for data entry.

### 2. Time Frame and Data

The JCCS was first implemented in Iraq in December 2006. Fiscal year 2007 contract information was taken from the JCCS. The system that was first initiated was a best-fit solution to meet the needs of the JCC I/A at that time. Over the next six months the JCCS used a spiral development to better address the information

that needed to be captured yet was not initially anticipated. There was a learning curve on what fields were to be required to ensure complete and accurate data. The first complete fiscal year that was captured in one location for contingency contracting in Iraq was 2007. The data from the JCCS was categorized according to the definitions and breakdowns of the 2008-RAND Report*: Analysis of Contingency Contracting for the United States Air Force* categories listed in Exhibit 2.

Those four basic categories are:

**a. Commodities**: a contract that engages a contractor whose primary purpose is to furnish an end item of supply.

**b. Services**: a contract that directly engages the time and effort of a contractor whose primary purpose is to perform an identifiable task rather than to furnish an end item of supply.

**c. Major Construction**: a project of $550,000 or greater and defined as the construction, alteration, or repair (including dredging, excavating, and painting) of buildings, structures, or other real property. For purposes of this definition, the terms “buildings, structures, or other real property” include (but are not limited to) improvements of all types, such as bridges, dams, plants, highways, parkways, streets, subways, tunnels, sewers, mains, power lines, cemeteries, pumping stations, railways, airport facilities, terminals, docks, piers, wharves, ways, lighthouses, buoys, jetties, breakwaters, levees, canals, and channels. Construction does not include the manufacture, production, furnishing, construction, alteration and repair, processing, or assembling of vessels, aircraft, or other kinds of personal property.

**d. Minor Construction**: construction as defined in major construction except less than $550,000.

### 3. Format of Data

There was no essential change to the format of the data. The JCCS offers a download of the SQL database into Microsoft Excel for a given time period. The database was queried for the FY07, and this data was used to generate the distribution used in the model. The data was placed into a pivot table that allowed the information to be used by the authors. The date was used to combine PRs for each category for the fiscal year.

## D. Current Procurement Model

PRs are submitted by units to the contracting office for the purpose of acquiring construction, commodities, and/or services. Each PR must pass through a series of reviews. The first step is to determine the dollar value of the PR. PRs with a dollar value less than $2,500 are ordered by the unit using a field ordering officer (FOO). FOOs are appointed by warfighting units and then trained by the CCOs to purchase items less than $2,500. PRs with a dollar value from $2,500 to $200,000 are routed for funding and then proceed to the contracting office to be put on contract. PRs exceeding $200,000 must pass a validation process for approval and funding. Those that are approved are forwarded to the contracting office and enter into the standard, serial contracting process (e.g., receive funded requirements package, solicit offers, evaluate proposals, award and administer contract). Depending on contract type the contract may go through administration or may be directly delivered to the unit. Figure 14 illustrates the current contracting process.

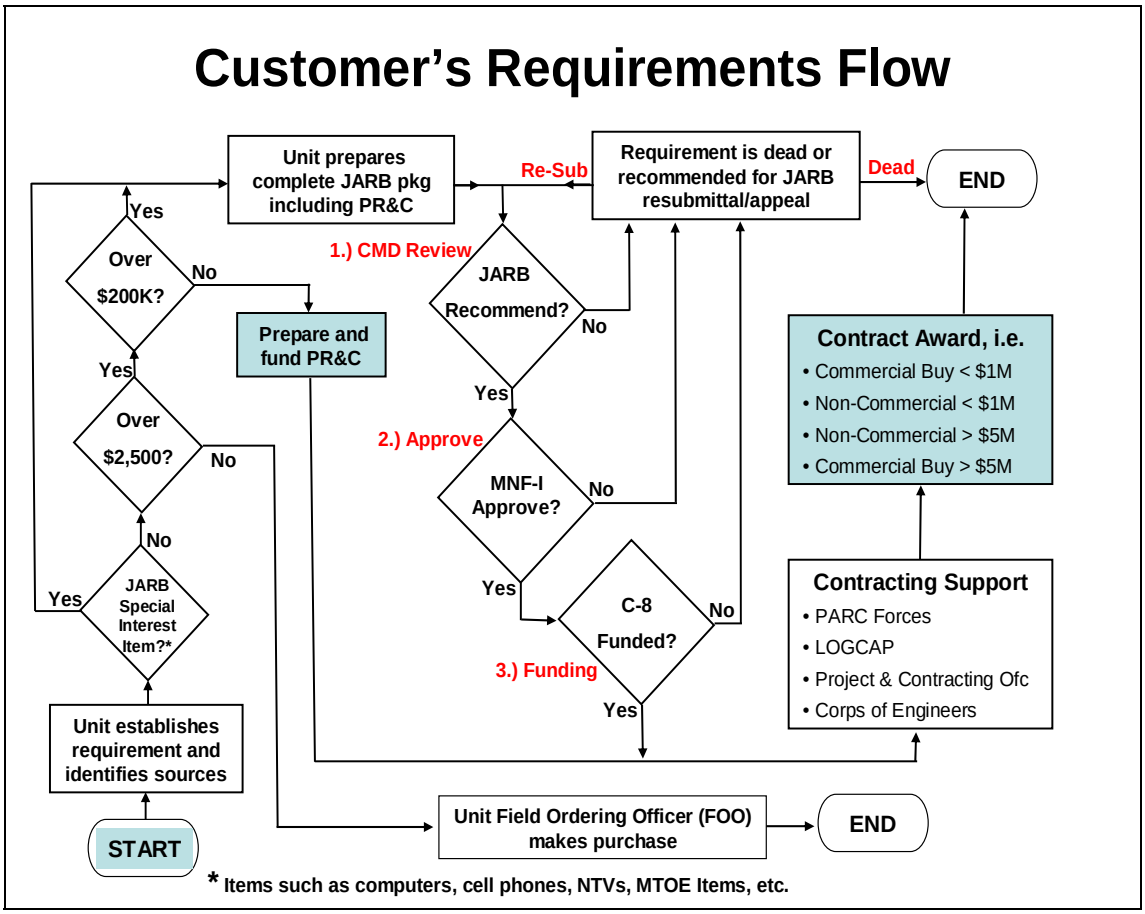



**Figure 14. Current Operational Customer Requirements Flow**
(JCC-I/A, 2006)

## E. Proposed PBAC Model under the JEBCES

Each PR must pass through a series of reviews. For requirements over $2,500, the first step is to determine if the item requested is on the researcher-proposed PBAC. If the requirement is ordered from the PBAC using YTTM-I CCO, the items are delivered to the unit. Requirements not on the PBAC follow the existing process and are handled by CCOs according to their dollar value. The PBAC model is shown in Exhibit 1 ( purple-dotted line). The processing time distributions for field ordering officers, purchase request and commitment (PR&C), Joint Acquisition Review Board, administration, and menu contracting were based on the authors' experience in contingency environments, as no data is currently collected in theater

for these processes. The processing time distribution for the contracting office is based on FY07 data collected by the JCC I/A.

### 1. Processes

The time for each process is based on the entity type.

- PRs under $2,500 are ordered by a unit FOO. The ordering time is dependent on the purchase category, namely construction, commodities, or services. The processing time distribution for PRs under this category is approximately one to three days and is based on the authors' contingency contracting experiences.
- A PR that is on the PBAC is ordered by a YTTM-I CCO. Depending upon the purchase category (construction, commodities, or services), the ordering time ranges from four to eight days.
- A finance officer through the PR&C process funds orders over $2,500 but less than $200,000.
- PRs requiring Joint Acquisition Review Board (JARB) approval and funding go through an application process that requires unit request and leadership approval. This process requires a board of officers that approves or disapproves requirements.
- Funded PRs are given to the supporting RCC for award. The PRs are assigned to an appropriate CCO depending on the dollar amount of the award.
- PRs requiring administration are assigned to the appropriate contracting officer for administration.

The proposed models were run under different experiments. A separate simulation was run to test the resource utilization and cycle-times with a different percentage of contracts being handled through the PBAC.

## F. Tools for Analysis

Analysis of system performance was done using the Theory of Constraints (TOC) and Little's Law, both of which were described in Chapter I. The TOC proposes that in any multi-stage processing system, one stage will be slower than the others (McMullen, 1998). One set of researchers explains, "TOC capitalizes on the concept of the critical chain of a processing system. A critical chain spotlights

the importance of timely delivery, as opposed to the achievement of individual tasks or milestones within a processing system" (Neu, Davenport, & Smith, 2007, p. 13). They continue by asserting that "Applying the five steps of TOC can reduce the effects of a constraint by guiding the manager to continually evaluate the system to determine bottlenecks and to synchronize the system to that constraint" (Neu, et al., 2007, p.14).

The authors' model will focus on decreasing the overall time it takes to get a PR through the entire process by utilizing Little's Law. If the authors decrease the overall system time, more PRs can be processed.

Cycle-time is the time it takes a unit (or PR) to go through the system. Throughput is the average number of jobs [PRs] that pass through the system per unit of time. Inventory is the number of jobs [PRs] within the system boundaries at a particular point in time (Apte et al., 2006). Researchers Brandy and Godfrey (2005) explain, "Little's Law generally is best understood when it is used to reduce cycle-times (flow-times), while TOC leads quickly to being able to identify and elevate a physical constraint (bottleneck) to increase throughput (flow rates)" (p. 37).

Through the use of Little's Law and the TOC the authors can satisfy the customer in terms of cost, quality, and timeliness of the delivered product or service, as well as minimize the administrative operating costs.

## G. Summary

The two simulation models were created using Arena 10.0 software. One included the new PBAC and one modeled the current contracting process. For the purpose of analysis, the current contracting process will serve as the base model for all comparisons. The next chapter will discuss and analyze the results from the different experimental runs on the models.

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# VI. Analysis and Results

## A. Introduction

The PBAC model outlined in Chapter V allowed for comparative analysis between the proposed and existing joint expeditionary contracting processes. The results were then compared and analyzed with an emphasis towards meeting the intent outlined in *FAR* Part 1.102-2 (a) Satisfy the customer in terms of cost, quality, and timeliness of the delivered product or service, and (b) Minimize administrative operating costs (General Services Administration, 2005). To improve the four measurements of cost, quality, timeliness and minimizing administrative operating costs, the authors used a combination of Little's Law and the Theory of Constraints in the model. The measurements are defined for use herein as:

**Cost**: Cost for warfighter satisfaction will be comparable to market conditions comparable to the quantities ordered.

**Quality**: Acceptable for use by the warfighter for the intended purpose.

**Timeliness**: Is delivered on or before the warfighters' required delivery date. The comparison for timeliness in the model is a delivery time less than the actual measured delivery time.

**Minimizing Administrative Operating Cost**: Provide uniformity and efficiency that ensures fairness and predictability in the procurement system.

The purpose of the authors' proposed model is to demonstrate that the PBAC can satisfy the customer in terms of cost, quality, and timeliness, and can minimize both administrative costs as well as the burden on personnel by creating uniformity and efficiency in the joint expeditionary contingency contracting execution process.

The data presented in this chapter shows, through the implementation of the PBAC framework, significant savings in the time it takes to process PRs. This results in quicker delivery of goods and services to meet the warfighters' operational requirements. The data also shows an increase in the utilization of tier 1 contracting officers, which in turn lowers the utilization of YTTM-II and YTTM-III CCOs. This

effect then results in more experienced contracting officers focusing on theater-wide strategic planning for kinetic and post-kinetic operations.

## B. Results

The base model represents the current contracting process utilized in a contingency environment. The four experiments were run as the authors changed the percentage of contracts going through the PBAC. The percent of utilization of the PBAC for each experiment was incrementally changed to 10%, 25%, 50%, and 75%, respectively. The data was then analyzed to determine total time-in-system for each entity and utilization rates for each of the CCO types described in Yoder's three-tier model in Chapter III.

## C. Total Time-in-System

The total time-in-system was expressed in days and each experiment was compared to the base model. The model gave a total time-in-system for each type of entity (or PR). When the authors standardized requirements and utilized the PBAC, the average total time-in-system decreased for each PR type. For example, by standardizing 10% of the commodity PRs into the PBAC, the total time-in system decreased by 12.2%. At the 75% standardized requirements level, the total time-in-system decreased by an average of 76% across all categories, with the greatest decrease realized in commodities at 84%. The complete results for total time-in-system are depicted in Table 3 below. The steady reduction in the total time-in-system directly represents the efficiencies of the PBAC structure and is largely explained by the increase of standardized kinetic and post-kinetic operational requirements through use of the PBAC model. One of the keys to this research was to illustrate how the PBAC model can improve uniformity and efficiency in the contingency contracting process and in turn, reduce costs and administrative burden of the CCOs during contingencies.

The total time-in-system for commodities is shown in the first column by each simulation run. The total time-in-system of commodities for the base model was

44.5 days. With 10% of PRs going to the PBAC, the total time-in-system decreased to 39.07 days, showing a decrease in the total time-in-system of commodities of 12% (column 2). This format is the same for the total time-in-system for major construction in columns 3 and 4, for the total time-in-system for minor construction in columns 5 and 6, and for the total time-in-system for services in columns 7 and 8. Major construction's total time-in-system was decreased by 21%, minor construction's time was decreased by 9%, and the total time-in-system for services was decreased by 11% with the same change of 10% of PRs going to the PBAC.

| Model | Total time in system— Commodity (in days) | % Decrease in cycle-time compared to Base Model | Total time in system— Major Construction (in days) | % Decrease in cycle-time compared to Base model | Total time in system– Minor Construction (in days) | % Decrease in cycle- time compared to base model | Total time in system— Service (in days) | % Decrease in cycle- time compared to base model |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| Base | 44.50 | | 136.40 | | 35.20 | | 48.80 | |
| 10% on PBAC | 39.07 | 0.12 | 107.90 | 0.21 | 32.10 | 0.09 | 43.30 | 0.11 |
| 25% on PBAC | 31.60 | 0.29 | 81.60 | 0.40 | 27.50 | 0.22 | 36.10 | 0.26 |
| 50% on PBAC | 18.24 | 0.59 | 49.50 | 0.64 | 18.60 | 0.47 | 23.01 | 0.53 |
| 75% on PBAC | 6.90 | 0.84 | 33.30 | 0.76 | 10.90 | 0.69 | 11.80 | 0.76 |

**Table 3. Total Time in System.**

## D. Contingency Contracting Officer Utilization Rates

Utilization rates represent the percentage of time a contracting officer is busy processing PRs and awarding contracts. Under the base model structure, YTTM tier II and III CCOs carry the highest burden for awarding and managing PRs regardless of dollar value or complexity. Under the PBAC structure, lower dollar value and less complex requirements are standardized. Such standardization allows for greater utilization of YTTM-I CCOs. As the data shows, when higher percentages of standardized requirements flow through the PBAC, utilization rates for YTTM-Is

increase. As a result, utilization rates for YTTM-IIs and IIIs decrease. The complete results for utilization rates for YTTM-I, -II and -III CCOs are depicted in Table 4 below.

Utilization rates for YTTM Tier I CCOs are shown in column one by each simulation run. The utilization of YTTM-I CCOs for the base model was .8%. With 10% of PRs passing through the PBAC, the utilization rate increased to 2.9%, showing an increase in utilization of YTTM-I CCOs of 2.1% (column 2). This format is the same for the utilization of YTTM-II CCOs in columns 3 and 4, and for the utilization of YTTM-III CCOs in columns 5 and 6. YTTM-II CCO's utilization rate decreased by 6.7%, and YTTM-III CCO's utilization decreased by .9% with the same change of 10% of PRs going to the PBAC.

| Model | Utilization Rates for YTTM Tier I CCOs | % Change compared to Base Model | Utilization Rates for YTTM Tier II CCOs | % Change compared to Base model | Utilization Rates for YTTM Tier III CCOs) | % Change compared to Base model |
|---|---|---|---|---|---|---|
| | | | | | | |
| Base | 0.008 | | 0.878 | | 0.882 | |
| 10% on PBAC | 0.029 | 0.021 | 0.811 | -0.067 | 0.873 | -0.009 |
| 25% on PBAC | 0.066 | 0.058 | 0.709 | -0.102 | 0.872 | -0.001 |
| 50% on PBAC | 0.148 | 0.140 | 0.536 | -0.173 | 0.871 | -0.001 |
| 75% on PBAC | 0.223 | 0.215 | 0.294 | -0.242 | 0.651 | -0.220 |

**Table 4. YTTM CCO Utilization Rates.**

Table 4 demonstrates the affect of the PBAC model on the utilization rates of the most experienced CCOs. The PBAC model is designed to shift the standard kinetic and post-kinetic requirements to YTTM-I CCOs, thus freeing up YTTM-II and -IIIs to focus on complex theater-wide requirements .

## E. Summary

This chapter demonstrated that when the authors utilize the PBAC framework the data shows they can achieve efficiencies in processing time, and resources in processing time and resource utilization can be achieved. With the ability to group common kinetic and post-kinetic requirements under more theater-wide contracts, the efficiency of the procurement system will result in lower costs and administrative burden while increasing support to the warfighter. In the next chapter, the authors will present their conclusions and make recommendations for further research.

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# VII. Summary, Conclusions, and Areas for Further Research

This chapter provides an overview of the effectiveness of EBC methodologies within OIF and the framework to provide uniformity and efficiency in a joint expeditionary contracting execution. This chapter ends with areas for future research.

## A. Summary

This project provided the initial study on the framework for the Joint Effects-based Contracting Execution System (JEBECES)—an integrated composite of people, products, and processes to deliver an acquisition capability to meet the warfighters' need. Within this framework, the researchers proposed a Phased-based Acquisition Capability (PBAC) as an enabling concept to absorb variations in warfighter requirements definitions and CCO execution methodologies, thereby providing uniformity and efficiency in future joint EBC contracting execution.

Chapter II introduced and explored the JCC-I/A's EBC methodologies under the *enable civil authority phase* of the OIF. The JCC-I/A integrated warfighter campaign plans to synchronize tactical contracting efforts to support the strategic objectives of the CCDRs by developing a concept of support, identifying key players, knowing the warfighters' battle rhythm, ensuring visibility by being the right planning evolution, and having flexibility with the enterprise. For example, by using EBC methodologies, the JCC-I/A provided time-definite delivery of essential supplies one to three days after kinetic forces cleared the neighborhoods of Baghdad during Operation Together Forward I.

Chapter III reviewed SIGIR's 2006 account of the contracting experience in Iraq under the previous phases: *deter, seize dominate,* and *stabilize* (Phases I-IV), respectively. Moreover, the researchers conducted an analysis of the major contracting authority-campaign phasing-funding timeline of OIF to highlight

misalignment and expose the fertile ground of opportunities for both warfighters and CCOs to provide effects under all phases of future campaign plans. The authors reviewed the 2007 Gansler Commission Report and highlighted systemic variations such as each service's TTPs for CCO training and development. Selected recommendations from both reports were incorporated as inputs into an iterative, problem-solving process called the systems engineering process (SEP) in Chapter IV.

Chapter IV presented the SEP fundamentals such as process inputs, stakeholder analysis, functional analysis, and design synthesis, and with them provided the general framework for the JEBCES. Given that stakeholders from warfighters to comptrollers have different needs from the same JEBCES, the researchers proposed transforming a baseline of kinetic and post-kinetic operational requirements into a PBAC and standardizing rapid acquisition methods, thereby providing uniformed requirements definitions to the warfighter and standard contracting execution methodologies to CCOs.

Chapter V simulated the cycle-time of processing FY07 JCC-I/A kinetic and post-kinetic requirements data through the current joint expeditionary contracting process to establish a baseline, and then through the proposed PBAC to identify efficiencies. The authors conducted four experiments based on the extent to which requirements were standardized. For example, the authors assumed 10% of kinetic and post-kinetic requirements (commodities such as office supplies) were defined, forecasted, and bulk funded, the result was a 12.2% decrease in the total time the requirement was in the contingency contracting execution system. In the last experiment kinetic and post-kinetic requirements were set at the 75% standardized requirements level. As a result, total system time decreased by an average of 76%, with the greatest decrease realized in commodities at 84%.

Chapter VI analyzed the results of the simulation. The data suggests to the extent kinetic and post-kinetic operational requirements are standardized, the DOD will gain greater efficiencies in the utilization of limited CCO resources, satisfy the

customer (warfighter) in terms of cost, quality, and timeliness of the delivered product or service, as well as minimize administrative operating costs during contingency operations.

## B. Conclusions

This Master of Business Administration Professional Report presented the general framework for the JEBCES and simulation and modeling of a proposed a PBAC as a concept that provides uniformed requirements definitions to warfighters and a standard rapid acquisition methodology for CCOs. As a result of this research effort, the authors have reached the following conclusions:

### 1. Conclusion 1

**Transforming a baseline of common kinetic and post-kinetic requirements into a PBAC improves joint expeditionary contracting execution**. Simulation results in Chapter VI revealed a significant reduction in the total time a requirement spends in the system using the PBAC. When compared to the base model, a 10% baseline of common requirements under PBAC (such as the 638 generator requests in Figure 12) reduced total system time to process the requests by 12.2%. The data from experiment four further suggests if operational customers are willing to standardize common kinetic and post-kinetic requirements a 75% level, warfighters can realize up to 76% reduction in cycle-time to process requirements.

### 2. Conclusion 2

**The JEBCES provides the framework for the DOD to better align funding to enable responsive expeditionary contract support.** The Federal Acquisition Regulation provides for bulk funding, whereby the CCO receives authorization from a fiscal and accounting officer to obligate funds on purchase documents against a specified lump sum of funds. If a high percentage of kinetic and post-kinetic requirements are standardized, budget officers could then use phase-based demand data to forecast and bulk-fund future requirements, thereby decreasing the time the warfighter spends in the requirements definition and funding phases of the process.

### 3. Conclusion 3

**The PBAC enables efficient and effective use of limited CCO resources.** Simulation of the current process revealed a utilization rate of YTTM-I CCOs for the base model of .8%. With 10% of PRs going through the PBAC, the utilization rate increased to 2.9%, showing an increase in utilization of YTTM-I CCOs of 2.1%. As a result, YTTM-II CCO's utilization rate decreased by 6.7% and YTTM-III CCO's utilization decreased by .9%, which translates into more YTTM-I CCOs ordering more routine, common kinetic and post-kinetic operational requirements such as office equipment and furniture, and more YTTM-II and III CCOs available to procure more complex, theater-wide requirements.

## C. Recommendations

### 1. Recommendation 1

Establish a working group comprised of the stakeholders in Chapter IV, Table 2 to determine each stakeholder's internal processes requirements and then incorporate them into the PBAC. For example, CAF require better payment processes during contingencies and predictability of requirements to establish inventories and transportation costs to better support the warfighter. The intent would be to incorporate and integrate CAF's processes into a PBAC to facilitate the transfer of phase-related demand data to better forecast demand and ensure time-definite delivery of construction, services, and supplies to the warfighter.

### 2. Recommendation 2

Once each stakeholder's internal processes are incorporated into the PBAC, conduct a full phase-based OIF spend analysis and develop a pre-awarded, rapid acquisition capability such as a multiple award indefinite delivery contract based on the phase-based spend analysis. Organize, train, and equip future CCOs with limited experience around PBAC for joint effects-based contracting execution. Additionally, the full phase-based spend analysis for OIF could also provide for a high percentage of defined requirements for the warfighter.

### 3. Recommendation 3

Equip future CCOs with a PBAC and integrate them into the Phase 0 (shaping phase) of future campaign plans. Given the amount interagency and multinational coordination required to shape the behavior of both allies and adversaries during this phase (United States Joint Forces Command, 2006), PBAC could provide framework to develop a strategic contracting capability. Moreover, just as in how other capabilities such as the Abrams tank or F-15 provide for standard TTPs, the PBAC could provide for standard TTPs for CCOs to minimize variations in contracting execution methodologies.

## D. Research Questions Addressed

The primary research question is: does transforming a baseline of common kinetic and post-kinetic operational requirements into a standard PBAC improve joint expeditionary contracting execution?

Based on the data, transforming a baseline of common kinetic and post-kinetic operational requirements into a standard PBAC for joint expeditionary contracting execution would provide a high percentage of uniformed requirements definitions for the warfighter and standard rapid acquisition methodologies for CCOs. Outputs from the model that was developed by the researchers' show conclusively that through its implementation, labor would reduce and response times would improve.

The secondary research questions are addressed below:

### 1. How can a PBAC provide for a percentage of uniformed warfighter requirements definitions?

Figure 12 presents FY07 OIF requirements data. Of the over 30,000 requests, 1,948 were for furniture and 1,019 were for appliances. Conceptually, on common requirements such as these, warfighters could use the demand data to define, forecast, and bulk-fund requirements based on the size of incoming units.

Furthermore, this data could provide for defined requirements in over 40 common purchase categories listed in Figure 12.

### 2. How can a PBAC provide for efficient use of limited contracting officer resources?

The efficient use of limited contracting resources was modeled in Chapter V of this research project, and the results were analyzed in Chapter VI. Chapter VI demonstrated that when utilizing the PBAC framework the data revealed significant efficiencies in processing time and also indicated that resource optimization can be achieved. With the ability to group common kinetic and post-kinetic requirements under pre-awarded, rapidly deployable acquisition capabilities, Level I CCOs could procure routine requirements under PBAC and release Level II and III CCOs to procure more complex requirements as well as integrate the warfighter's operational planning cycles.

### 3. What are the benefits of integrating and synchronizing a PBAC into Phase 0 (*shaping phase*) of the CCDRs campaign plan?

Integrating and synchronizing CCOs into the *shaping phase* (Phase 0) with a capability could reduce the number of undesired effects throughout subsequent phases of the CCDR's campaign plan. In OIF, the DOD and CCDRs alike did not realize the benefits of the JCC-I/A until almost four years after the OIF OPLAN activation. Under the authors' model, CCOs would be better prepared to execute the operational extension of the economic instrument of power (contracting) during the planning stages rather than building the capability during critical phases of the campaign plan, such as the shift from the *dominate phase* to the *stabilize phase*.

### 4. How can the JEBCES establish the framework to enable responsive joint expeditionary contracting execution?

The JEBCES provides the framework for an integrated composite of people, products, and processes to develop an acquisition capability to meet the warfighters' need. Given that there are numerous stakeholders in the joint expeditionary contracting process, all stakeholders have input into the capability—PBAC— as it

relates to elements of their internal processes that would, if unknown to CCOs, could delay the time-definite delivery of goods and services to the warfighter.

## E. Areas for Further Research

During the course of this research and analysis, the authors identified areas that needed further research that were outside the scope of this project. They are:

To conduct a full spend analysis of all phases of OIF to establish a baseline for strategic sourcing opportunities in the contingency environment. An analysis of this data will provide the foundation for a high percentage of uniformed requirements definitions throughout all phases of future campaign plans.

Evaluate the interoperability of a PBAC during disaster relief and humanitarian operations. Disaster relief and humanitarian operations such as Hurricane Katrina provide significant demand data during all phases of relief operations. Could a PBAC enable time-definite delivery of supplies and services by establishing uniformed requirements definitions and standard rapid acquisition methods during these critical times?

Evaluate CAF's supportability of PBAC requirements data. CAFs use phase-based demand data to better forecast time-definite delivery of supplies and services through all phases of the campaign plan. Given this phase-based demand data, how can CAF provide greater predictability in the delivery of goods and services to the warfighter?

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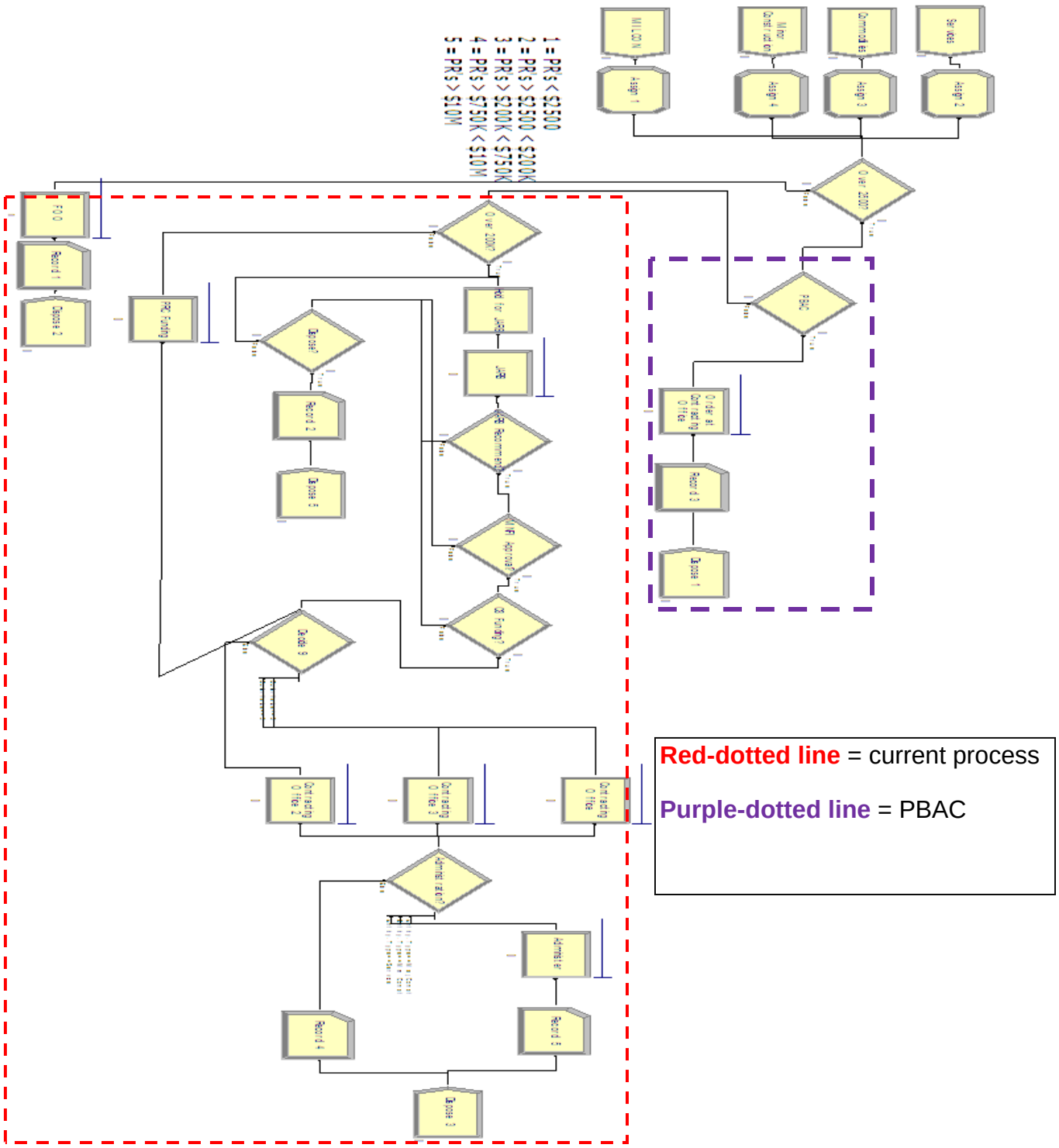
# Appendix 1. Modeling and Simulation of a Phase-based Acquisition Capability



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# Appendix 2. Categories Used in these Analyses

| Category | Examples |
|---|---|
| Appliances | Laundry (washers and dryers),<br>Kitchen (refrigerators, kitchen ranges, microwave ovens, dish washers),<br>Miscellaneous (water heaters, air conditioners, ceramic heaters, ice machines) |
| Billeting Services | Billeting (apartment rental, leasing of rooms),<br>Downtown stays (hotel lodging, room bills) |
| Buildings and Shelters | Residential buildings (living quarters, trailers),<br>Structures (clamshell buildings, dome structures), Pre-fabricated facilities (storage buildings, shower trailers, field showers, Water-treatment plants) |
| Cleaning Supplies | Cleansers (detergents, dishwashing liquid, laundry soap, glass cleaner),<br>Cleaning supplies (rags, brushes, rubber gloves, brooms, mops) |
| Communication Equipment | Local area network equipment (server, high-speed network equipment Ethernet catalyst switches [Ethernet equipment other than cards], coaxial cable, data cable, Cisco switches, fiber optic items, routers, Linksys boxes, X-port switches, Secret Internet Protocol Router Network [SIPRNET] equipment),<br>Communication systems (news dishes, uninterruptible power supply systems, videoconference equipment),<br>Personal devices (radio equipment, handsets) |

| Category | Examples |
|---|---|
| Computer Equipment and Software | Computers (desktops, laptops, keyboards, mice, computer monitors, computer speakers),<br>Computer drives (hard drives, memory sticks),<br>Computer accessories (personal digital assistants, scanners, CD burners, DVD burners, computer power supply),<br>Server connections (9 USB hubs and cables, Ethernet cards, modems),<br>Software (Adobe Acrobat, Microsoft Windows licenses) |
| Construction, Heavy Equipment | Backhoes, loaders, bulldozers, dump trucks, excavators, graders, trenchers |
| Construction Services | Preparation (soil stabilization, clearing, digging, soil surveys),<br>Building (construction work, road construction, ramp construction),<br>Clearing (demolition/teardown, tree removal),<br>Miscellaneous (airfield marking, sandbag services, various renovations and upgrades, installation of equipment, connect/install generators) |
| Construction Supplies | Hardware (nails, screws, nuts, bolts, washers),<br>Construction material (steel, concrete, cement, asphalt, wood, plywood, sand rock, gravel, 2x4s, planks, crossbeams),<br>Electrical material (circuit boards, grounding material, cable),<br>Plumbing material (pipe, toilets),<br>Finishing material (carpet, floor covering, tile, sealant, stains, paint, painting equipment, bathroom fixtures),<br>Runway construction and repair material,<br>Miscellaneous (ladders, culverts, manhole covers, heating, ventilation and air conditioning) |

| Category | Examples |
|---|---|
| Custodial and Latrine Services | Cleaning (latrine trailers, hangars),<br>Custodial services,<br>Janitorial services |
| Dining Supplies | Cooking utensils (spatulas, spaghetti tongs, can openers, cooking thermometers),<br>Kitchen supplies (coffee pots, mixers, canisters, pans, aluminum foil, salt and pepper shakers),<br>Serving supplies (dining trays, paper products, plastic utensils, food containers),<br>Large equipment (pastry cases, beverage dispensers, salad bars),<br>Other (aprons, tablecloths) |
| Financial | Fees (account maintenance fees, transaction charges, currency exchange, electronic funds transfer fees),<br>Checkbooks,<br>Rebates (International Merchant Purchase Authorization Card [IMPAC]/GPC rebates) |
| Fire Protection | Equipment (fire extinguishers, fire bottles, flame-retardant hoods, smoke alarms, smoke detectors, fire helmets firefighter equipment) |
| Food (Not Catering) | Food (break, cake popcorn),<br>Drinks (sports beverages),<br>Cooking ingredients (cooking oil, salt) |
| Force Protection | Barricades (concrete barriers, roadblock spikes, barbed wire, Concertina wire, chain-link fencing, cones, sandbags),<br>Dog-related equipment (kennels, food, supplies),<br>Surveillance (motion detector, walk-through metal detectors, gas detectors, search pit equipment, guard towers, metal detectors, floodlights),<br>Miscellaneous (badge-activated locks, reflective belts, reflective tape, bio detection/protection equipment),<br>Police-related items (light bars, blood-alcohol detection meters, handcuffs) |

| Category | Examples |
|---|---|
| Fuel and Fuel-related Items (Not Jet Fuel) | Fuels (diesel, acetylene, propane),<br>Fuel-storage equipment (fuel tanks, fuel bladders),<br>Fuel-dispensing equipment |
| Furniture | Office (desks, chairs, couches, bookcases, filing cabinets, workstations),<br>Residential (beds, mattresses, dressers, footlockers),<br>Other (stools, rugs, seats, cabinets, tables, folding chairs, paintings) |
| Generators | Various power generators |
| Grounds Maintenance Services | Grounds keeping services |
| Heavy Equipment (Not Construction) | Large vehicles (refrigerated trucks, fire trucks, flatbed trucks, sewage-removal trucks, water trucks, fuel trucks, freezer trucks),<br>Cranes, forklifts, bucket loaders, aircraft stairways |
| Interpreter Services | Interpreters, linguists, and translator services |
| Latrine Supplies | Shower and bathroom supplies (soap, waterless hand cleanser, paper towels),<br>Chemicals for portable toilets |
| Laundry Services | Laundry and dry cleaning,<br>Linen exchange,<br>Alterations embroidery,<br>Self-serve laundry centers |
| Medical Services | Doctor, dental, optometry, and chiropractic services,<br>Hospital charges,<br>Magnetic resonance imaging, X-ray consultation,<br>Biohazard disposal |
| Medical Supplies | Medical supplies (bandages, thermometers, sterile water, medication, insulin, vaccines, syringes),<br>Medical equipment (X-ray equipment, dental equipment, respirators, lab equipment, monitors),<br>Medical reference books,<br>Mortuary-affairs items |

| Category | Examples |
|---|---|
| Miscellaneous Commodities | Items for personnel (T-shirts for various activities [not MWR]),<br>Non-mission (backpacks, gloves, knives, towels, duffel bags, irons, duct tape, keys, bed linens, window treatments, baby wipes, sunscreen),<br>Non-potable water (bulk water, dry ice),<br>Small containers (hard-sided cases),<br>Small equipment (locks, coolers/ice chests, small heaters, scales, batteries [not for cars], cigarette butt cans, cameras, video recorders, ear protectors, flashlights, irons, voltage converters/adapters, absorbent mats, air filters),<br>Other miscellaneous items (insect bait, weed killer, mousetraps, flags, etiquette books, signs, anti-fatigue mats, spill kits, lamps, mirrors [not specific to other categories], filters [generic], wastepaper baskets) |
| Miscellaneous Equipment | Small equipment (mortar mixer, wet and dry vacuums, pumps, refrigeration units, air compressors, blowers, hedge trimmers, Coleman products, portable vacuums, fans, plasma monitors [not TVs]),<br>Large containers (shipping containers, tanks, food and trash containers, steel drums, intermodal containers),<br>Food/water screening (water-detection equipment, salmonella screening kits),<br>Hard-to-categorize items (cash counters, bullhorns, megaphones, hand-washing stations, photo lab accessories, turbid meters, pallets, trolley jacks, locksmith equipment, adapters [not specific to other categories]) |

| Category | Examples |
|---|---|
| Miscellaneous Services | Miscellaneous (vehicle registration and licensing, photo developing, locksmith services, Internet services, picking up litter, photocopying, engraving, storage handling, airfield sweeping, grease removal [including cleaning grease traps]),<br>Professional services (consultant services), |
| Refuse and Garbage Services | Refuse and garbage services,<br>Trash/waste collection and removal |
| Repair/Maintenance Services | Service contracts,<br>Item repair and maintenance (bicycles, vehicles, generators),<br>Calibration |
| Tools | Basic tools (hammers, screwdrivers, drills, drill bits, clamps),<br>Other tools (multipurpose tools, pressure sprayers),<br>Welding and soldering equipment |
| Transporting Cargo | Express mail fees and other shipping charges, delivery charges,<br>Custom fees |
| Transporting People | Airfare,<br>Emergency leave,<br>Taxi and limousine charges |
| Uniforms | Honor guard T-shirts, military boots, brassards<br>Insignias and patches (enlisted rank, CENTAF patches, desert patches) |
| Utility Services | Electricity charges |
| Vehicle Repair Parts | Equipment (tow vehicle equipment, battery charges),<br>Parts (tires, radiators, starters, belts, clutches, shock absorbers, radiator hoses, wiper blades, oil filters, pumps, switches),<br>Fluids (transmission fluid, motor oil) |

| Category | Examples |
|---|---|
| Vehicles for Transportation | Passenger vehicles (autos, buses, sedans, light trucks, sport-utility vehicles),<br>Other small vehicles (pickup trucks, all-terrain vehicles, John Deere Gator utility vehicles) |
| Water | Potable water,<br>Potable ice |

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# 2003 - 2008 Sponsored Research Topics

## Acquisition Management

- Acquiring Combat Capability via Public-Private Partnerships (PPPs)
- BCA: Contractor vs. Organic Growth
- Defense Industry Consolidation
- EU-US Defense Industrial Relationships
- Knowledge Value Added (KVA) + Real Options (RO) Applied to Shipyard Planning Processes
- Managing Services Supply Chain
- MOSA Contracting Implications
- Portfolio Optimization via KVA + RO
- Private Military Sector
- Software Requirements for OA
- Spiral Development
- Strategy for Defense Acquisition Research
- The Software, Hardware Asset Reuse Enterprise (SHARE) repository

## Contract Management

- Commodity Sourcing Strategies
- Contracting Government Procurement Functions
- 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
- USMC Contingency Contracting

## Financial Management

- Acquisitions via leasing: MPS case
- Budget Scoring
- Budgeting for Capabilities Based Planning
- Capital Budgeting for DoD
- Energy Saving Contracts/DoD Mobile Assets
- Financing DoD Budget via PPPs
- Lessons from Private Sector Capital Budgeting for DoD Acquisition Budgeting Reform
- PPPs and Government Financing
- ROI of Information Warfare Systems
- Special Termination Liability in MDAPs
- Strategic Sourcing
- Transaction Cost Economics (TCE) to Improve Cost Estimates

## Human Resources

- Indefinite Reenlistment
- Individual Augmentation
- Learning Management Systems
- Moral Conduct Waivers and First-tem Attrition
- 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
- Organizational Modeling and Simulation
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