When CMMI-AM

No Longer Suffices

November 14, 2006

Presentation Overview

- **Presentation is a two-person "tag team" presentation.**

- **1st part presents a general argument for a new integrative [CMMI] perspective.**
  - CMMI-centered.
  - How the landscape has changed and the need for a more holistic approach

- **2nd part presents an argument for smarter strategic sourcing (commercial definition) processes.**
  - Strategic Sourcing-centered.
  - Expectations of order of magnitude change in sourcing efficiencies and effectiveness to survive,
  - Post contracting management focus over the contract itself as a driver of success,
  - How value realization overshadows cost management in a non-commodity environment,
  - Utilizing collaborative solutioning to outperform competitive forces,
  - Performing the critical balancing act of relationship management and tough negotiations to maximize success.

CMMI Vision

The initial vision for CMMI was to integrate the competing maturity models and provide more consistent process improvement

- Cause integration of the *functional disciplines* within organizations and across programs
- Increase *systems engineering* process maturity as organizations migrate from the sun-setting CMMs to CMMI

Build on and improve the significant work done on CMM-like Models

How we got where we are

- CMMI Sponsors opted to pursue staged and continuous models to preserve legacy
  - SW-CMM, staged
  - SECM, continuous

We created "level-mania" instead of continuous improvement

Have we lost sight of the goal?

The end goal of CMMI is to provide a model for continuous process improvement, to achieve:

- Reduced cycle times
- Meeting cost & schedule targets
- Improve quality

When achieving a level replaces the focus on continuous improvement, we've lost sight of the goal

Level-mania
The Solution

- DoD desires to shift focus from maturity levels to capability profiles
  - Remove the enticement of maturity levels and “one size fits all” syndrome
- Discourage use of maturity levels as selection criteria and replace with targeted CMMI-based risk and capability assessments & profiles
- Develop meaningful measures of process capability based not on a maturity level, e.g. Level 3, but on process performance

Goal is to improve the impact of CMMI on program performance

Summary

- CMMI has the potential to do even greater things for development of Systems
- "Continuous Improvement" is just as important for the CMMI product suite as it is for organizations

The Department would like to increase focus on understanding the capabilities of both our organizations and our industry partners, instead of merely achieving maturity levels

CMMI Workshop, Sept 7&8, 2005

- The workshop addressed several significant aspects of utilizing CMMI in the DoD and federal acquisition process that have been troublesome, and developed recommendations that the CMMI Steering Group, and DoD or federal acquisition agencies can address. Some issues that were discussed include:
  - Background on how organizations approach CMMI appraisals and why
  - Use of Appraisal Disclosure Statement by acquiring organizations
  - Formal guide to CMMI Usage for DoD
  - Training for DoD Acquisition Organizations in the use of CMMI for DoD
  - Government lack of understanding of need for mature SE content and practice
  - Specifying or requiring CMMI in RFPs
  - CMMI Appraisal expiration date

Schaeffer, Workshop and Summit on CMMI Use in DoD Programs, September 7, 2005.

Industry to DoD: 5 + 1 => 0

Workshop Findings

- Programs execute at lower maturity levels than their organizations have achieved and advertised
- Appraisals use small samples—don't cover all projects
- You can't judge a program without appraising it
- How can an organization's level be for "Life" when people and processes change?
- High-maturity practices are not consistently applied at the project level after contract award
- Is the completeness of appraisal disclosure statements adequate?
- Low-maturity acquirers and high-maturity suppliers

Sound Familiar?

Schaeffer, DoD and CMMI, NDIA, Nov 15, 2005

The New(est) look at CMMI for ACQ and DEV

- In the current marketplace, there are maturity models, standards, methodologies, and guidelines that can help an organization improve the way it does business. However, most available improvement approaches focus on a specific part of the business and do not take a systemic approach to the problems that most organizations are facing.

- By focusing on improving one area of a business, these models have unfortunately perpetuated the stovepipes and barriers that exist in organizations.

- Capability Maturity Model® Integration (CMMI®) provides an opportunity to avoid or eliminate these stovepipes and barriers through integrated models that transcend disciplines. [pg 3]

- Since 1991, CMMs have been developed for a myriad of disciplines. Some of the most notable include models for systems engineering, software engineering, software acquisition, workforce management and development, and integrated product and process development.

- Although these models have proved useful to many organizations in different industries, the use of multiple models has been problematic.

Dodson, et al, Adapting CMMI for Acquisition Organizations: A Preliminary Report, Improving Processes for Better Products, CMU-2006-SE-005. June 2006.

CMMI ACQ ASSESSMENT OF SITUATION

- Although these models have proved useful to many organizations in different industries, the use of multiple models has been problematic.
- Many organizations would like their improvement efforts to span different groups in their organizations.
- However, the differences among these discipline-specific models used by each group, including their architecture, content, and approach, have limited these organizations' ability to broaden their improvements successfully.
- Further, applying multiple models that are not integrated within and across an organization is costly in terms of training, appraisals, and improvement activities. [pg 6]

Dodson, et al, Adapting CMMI for Acquisition Organizations: A Preliminary Report, Improving Processes for Better Products, CMU-2006-SE-005. June 2006.

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CMMI ACQ BASIC ARCHITECTURE: 16 + 6

- The initial draft CMMI-ACQ contains unique acquisition practices in six process area that cover solicitation and supplier agreement development, acquisitions management, acquisition requirements development, acquisitions technical solution, acquisition validation, and acquisition verification.

- The six process areas are supplemented by 16 process areas that cover project management, organizational and support process areas.

- These 16 processes are necessary but not sufficient to executing as a successful acquirer. [ACQ] [pg 8]

Dodson, et al, Adapting CMMI for Acquisition Organizations: A Preliminary Report, Improving Processes for Better Products, CMU-2006-SE-005. June 2006.

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CMMI-ACQ's TWO 'IMPROVEMENT' APPROACHES

- **Levels are used in CMMI to describe an evolutionary path recommended for an organization that wants to improve the processes it uses to acquire its products and services. Levels can also be the outcome of the rating activity of appraisals.**

- **Appraisals can apply to organizations that comprise entire companies, or to smaller groups such as a small group of projects or a division within a company. [ACQ]**

- **CMMI supports two improvement approaches.**
  - **The first utilizes what is called the continuous representation; the continuous representation is based on capability levels.**
  - **The second utilizes what is called the staged representation; the staged representation is based on maturity levels. [ACQ] [pg 19]**

Integration => A new Acquisition Framework

In The Beginning Models	Capability Maturity	First Phase Model Integration	Second Phase Model Integration	'Final' Phase ?
MS 2167a Prescriptive Unidirectional Standards	SW-CMM + SE-CMM + SA-CMM +	CMMI w/ 2 reps phased/continuous + CMMI AM	CMMI ACQ CMMI DEV CMMI SVC	ONE MODEL: CMMI "ACQ"
NONE	MANY	FEW	3-in-1	ONE ?

Capability Maturity Model® Integration (CMMI®) Version 1.2 Overview

Sponsored by the U.S. Department of Defense

Stellar Solution: Constellations

Carnegie Mellon
Software Engineering Institute

CMMI

The CMMI Framework

The CMMI Framework is the structure that organizes the components used in generating models, training materials, and appraisal methods.

The CMMI Product Suite is the full collection of models, training materials, and appraisal methods generated from the CMMI Framework.

The components in the CMMI Framework are organized into groupings, called constellations, which facilitate construction of approved models.

- During v1.2 development, CMMI-SE/SW/IPPD/SS was moved to the CMMI for Development (CMMI-DEV) constellation.
- Two new constellations have been commissioned by CMMI Steering Group:
  - CMMI for Services (CMMI-SVC)
  - CMMI for Acquisition (CMMI-ACQ)

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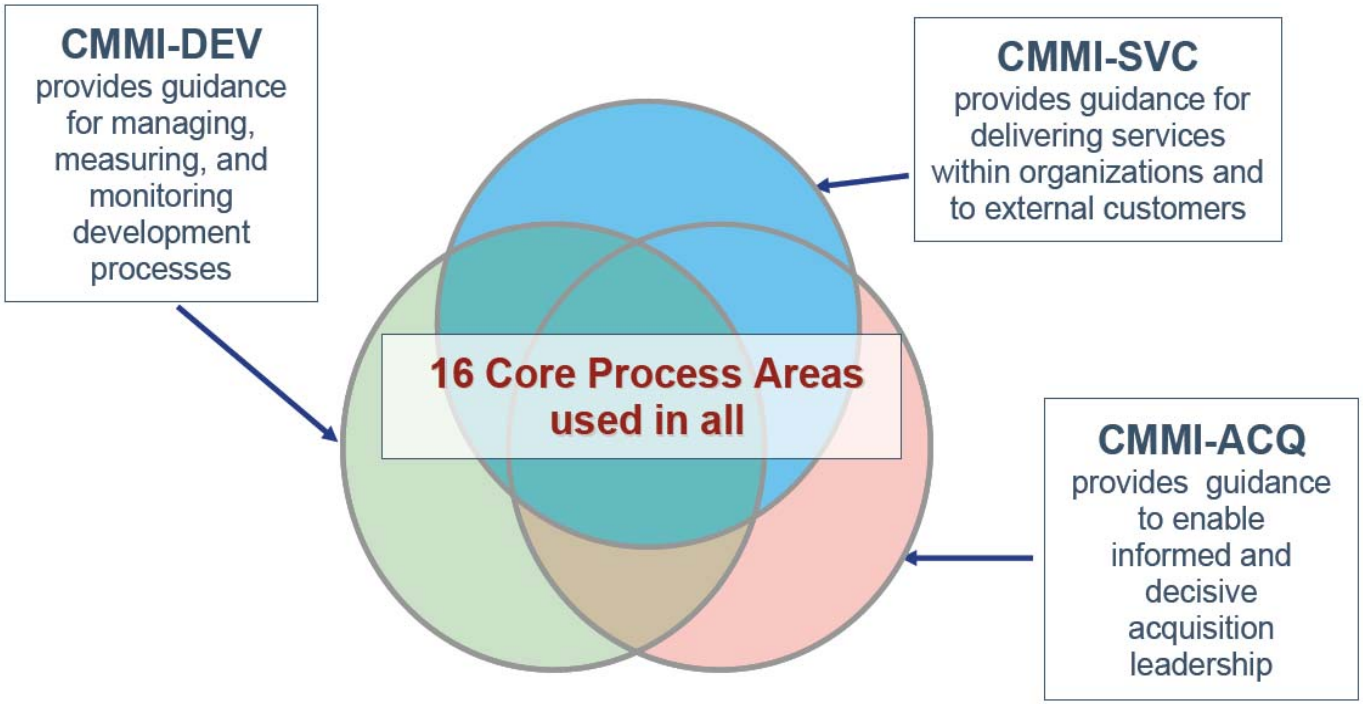
3-in-1

Carnegie Mellon
Software Engineering Institute

CMMI

Three Complementary Constellations



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EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

May 20, 2005

MEMORANDUM FOR CHIEF ACQUISITION OFFICERS
CHIEF FINANCIAL OFFICERS
CHIEF INFORMATION OFFICERS

FROM: Clay Johnson III
Deputy Director for Management

SUBJECT: Implementing Strategic Sourcing

The federal government spends approximately $300 billion on goods and services each year, and federal agencies are responsible for maximizing the value of each dollar spent. Therefore, agencies need to leverage spending to the maximum extent possible through strategic sourcing. Strategic sourcing is the *collaborative* and *structured* process of critically analyzing an organization's spending and using this information to make business decisions about acquiring commodities and services more effectively and efficiently. This process helps agencies optimize performance, minimize price, increase achievement of socio-economic acquisition goals, evaluate total life cycle management costs, improve vendor access to business opportunities, and otherwise increase the value of each dollar spent.

Each agency's Chief Acquisition Officer (CAO), Chief Financial Officer (CFO), and Chief Information Officer (CIO) are responsible for the overall development and implementation of the agency strategic sourcing effort, which begins with a spend analysis and the identification of commodities for which strategic sourcing should be implemented. The CAO shall lead the CAO/CFO/CIO development team and will take the following actions:

1. Not later than October 1, 2005, the CAO shall identify no fewer than three commodities that could be purchased more effectively and efficiently through the application of strategic sourcing, exeluding software that could be purchased under the SmartBuy program. Agencies may include existing strategic sourcing efforts for this purpose.

2. The CAO shall lead the collaborative development of an agency-wide strategic sourcing plan in coordination with the agency CFO, CIO, representatives from the agency's Office of Small and Disadvantaged Business Utilization, and other key stakeholders, as appropriate. The plan should reflect the application of sound program and project management principles. At a minimum, the plan should include the following elements:

a. Strategic Sourcing Governance – A charter should be developed outlining the members, roles, responsibilities, and operations of an agency-wide Strategic Sourcing Council and any commodity councils to be formed.

b. Strategic Sourcing Goals and Objectives – The Strategic Sourcing Council should establish annual strategic sourcing goals and objectives, by fiscal year. These goals and objectives should include existing strategic sourcing efforts, as well as prioritizing new initiatives. In addition to cost and performance goals, any strategic sourcing plan must be balanced with socio-economic goals for small businesses, small disadvantaged businesses, women-owned small businesses, veteran-owned businesses, service-disabled veteran-owned businesses, HUB-Zone and preference programs (e.g., Javits-Wagner-O'Day), and others, as appropriate.

c. Performance Measures – The agency Strategic Sourcing Council should establish agency-wide performance measures and reporting requirements in order to monitor and continuously improve the strategic sourcing program.

d. Communications Strategy – The Strategic Sourcing Plan should also include a communication strategy that clearly conveys senior management's commitment to the effort, describes the scope of the effort, and identifies any organizational changes. The communications strategy should also include steps to make agency employees aware of awarded strategic sourcing contracts and how they are to be used.

e. Training Strategy – The plan should identify actions necessary to educate agency personnel to support effective and efficient strategic sourcing implementation and management.

3. Beginning in January 2006, the CAO shall report annually to the Office of Federal Procurement Policy (OFPP) regarding, at a minimum, reductions in the prices of goods and services, reductions in the cost of doing business, improvements in performance, and changes in achievement of socio-economic acquisition goals at the prime contract and, if possible, the subcontract level. Agencies shall develop methodologies for establishing baseline data and subsequent changes to this baseline and shall consistently apply this methodology throughout the strategic sourcing process.

Using information from the agency reports and other data sources, OFPP may identify several commodities that could be strategically sourced government-wide, and will establish an interagency structure for managing the acquisition of these commodities.

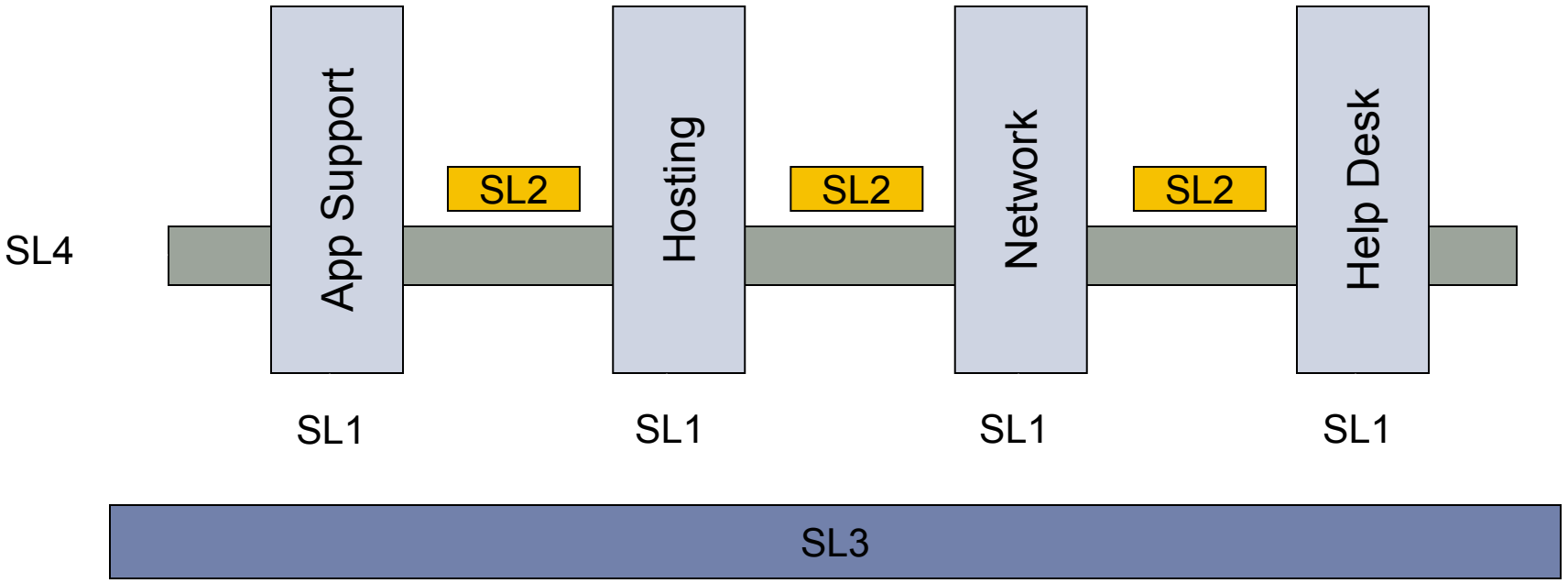
To facilitate the development of a strategic sourcing community and build a subject matter expert network, agencies shall identify a strategic sourcing point of contact. Please submit the person's name, title, telephone number, and e-mail address to Lesley Field at OFPP by July 1, 2005 (lfield@omb.eop.gov).

Maximizing value for taxpayers is a top priority for OMB, and I look forward to working with the acquisition community on this important initiative.

An Acquisition Process Conceptual Model

This Acquisition Process model contains four types of service levels:

[Marais, Global Sourcing in an Increasingly Outsourced Environment, SIM ITPWG, 2006.]



SL1: Component Level

SL2: Interface / Handoff

SL3: Collaborative Process

SL4: End-to-End

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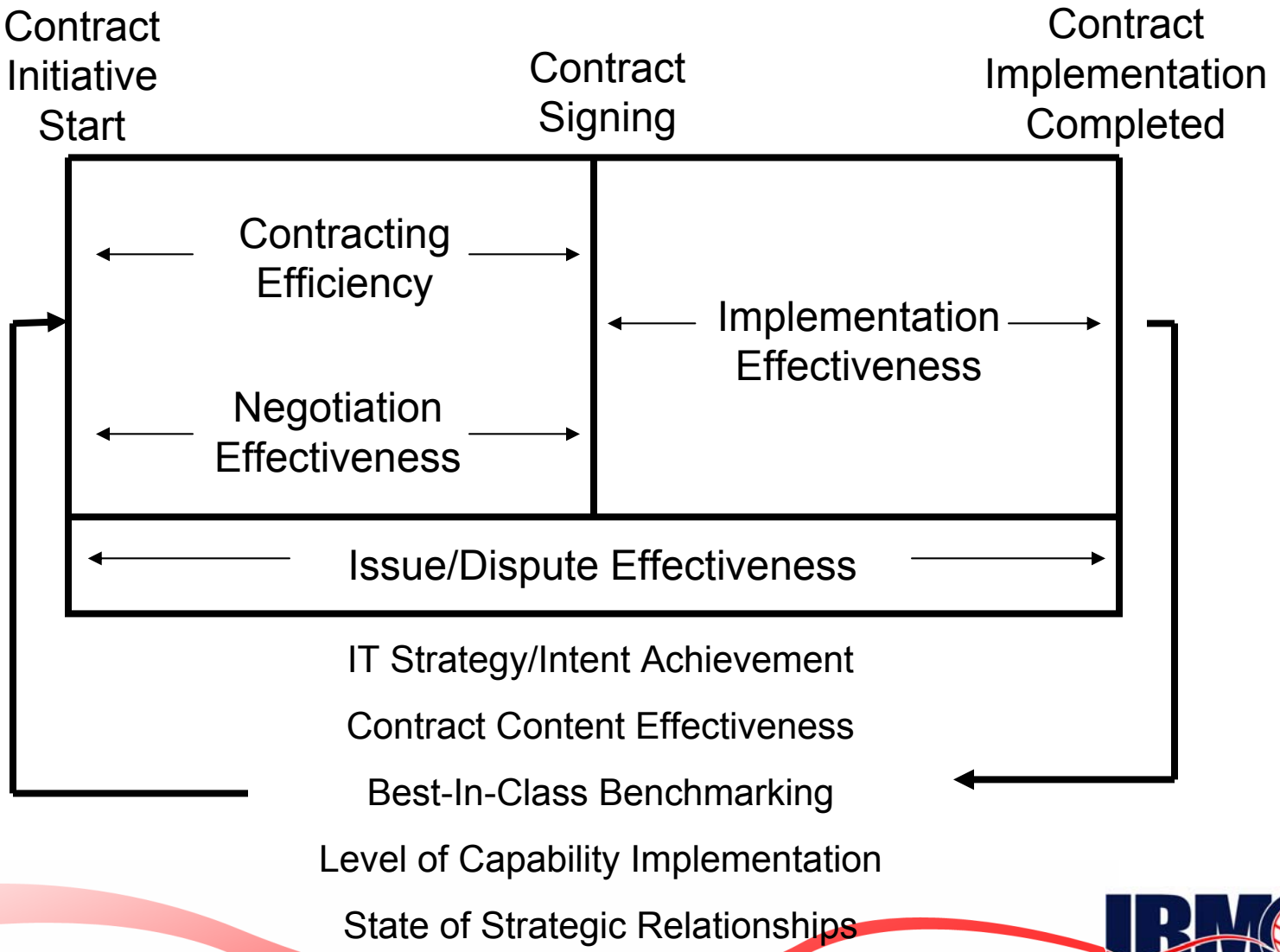
Closed Loop Contract Management Life Cycle



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Marais, Global Sourcing in an Increasingly Outsourced Environment, SIM ITPWG, 2006.

Framework for Acquisition Relationship Management Program

- Acquisition effectiveness is judged by what you measure
- Acquisition process models should measure the necessary elements *bilaterally* in each of the following categories:
  - Partnership
  - Process
  - Continuous Improvement
  - Performance
- Acquisition process models should differentiate between tough negotiations and good relationships which are not mutually exclusive
- "Where's the Meat?"
  - Good acquisition processes depend on the bridging processes in the middle.
  - Acquisition processes which focus on the two halves of the bun miss the meat.
- One Unified Acquisition Process model for Acquirer and Provider solves the "gap in the middle" problem.

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Modified from Marais, Global Sourcing in an Increasingly Outsourced Environment, SIM ITPWG, 2006.

CMMI Acquisition Module

- New CMMI Acquisition Module (CMMI-AM) should prove valuable in assisting program offices in improving acquisition process
  - Recent pilot efforts indicate positive effect
- Results not expressed as “Levels” but as Capability Profile
- Self-initiated, for internal use
- Will help put program offices on path to acquisition process improvement

Strategic Sourcing: Acquisition as an Integrated End-to-End Model

- **Industry Best Practices in "strategic sourcing" [might] represent a useful approach to consider for framing [future] integration efforts within the CMMI model "family"**
  - **The conceptual view of one CMM model for each end of a dumbbell (CMMI ACQ + CMMI DEV) might be found to work less well than one integrated model for whole process:**
    - **Focus on acquirer processes [one end]**
    - **Focus on supplier processes [one end]**
    - **Focus on acquirer-supplier processes [bidirectional evaluative gap-bridging processes] in the middle**

References

- Bernard, et al, CMMI Acquisition Module (CMMI-AM), Version 1.1, CMU/SEI-2005-TR-011, ESC-TR-2005-011. May 2005.
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Speaker Biographies

- Claude Marais is a seasoned sourcing and technology executive with more than 20 years global experience in major corporations such as General Motors and Coca-Cola. His background includes application development, global sourcing and outsourcing management with budgets of up to $3 Billion per year. As a thought leader in sourcing management he has played key roles in industry organizations. Amongst others, he is a Fellow and Honorary Vice-President of the International Association for Contract and Commercial Management and the founder of the Society for Information Management IT Procurement Working Groups.

- Dr. Carl Clavadetscher is Professor of Systems Management at the Information Resources Management College (IRMC), National Defense University (NDU). Dr. Clavadetscher currently heads the acquisition portion of the IRMC Advanced Management Program (AMP) and IRMC CIO program. Prior to joining IRMC, Dr. Clavadetscher was Professor of Information Systems and Chair of the Computer Information Systems Department at Cal Poly Pomona, a department DPMA recognized as the nation's best (1988). Dr. Clavadetscher has held appointments at IBM's Los Angeles Research Center, Los Angeles Water and Power MIS, and the Rockwell Corporation. He is a combat decorated veteran of Vietnam (MACV). Dr. Clavadetscher has been an active speaker and author on IT issues for almost 30 years.