CMMI for Services: An Approach to Improve Your Program Management Office

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Pat Mitryk

cognence inc
Improving Software Economics

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Topics

• Situation Discussion
  – Current Situation
  – Problems/Questions

• Scoping
  – Challenges
  – Before We Can Get Started
  – Scoping Decisions and Decisions

• Some Steps Toward the Improvement
• Benefits
• Lessons Learned
Current Situation – What Business Are We In?

Government Contracts for a variety of Strategic Support Services

- IDIQ – Indefinite Delivery, Indefinite Quantity
- Program Support & Leadership
- Technical Support – Engineering, Communications, IT, etc.
- Resource sourcing for a wide variety of services

- Improve Customer Satisfaction
- Increase quality of product and service delivery and support while reducing costs
- Improve profitability = Increase Direct Labor
Current Situation – 2: What is the “PMO”?  

Program Management Office Entities – Functional Groups, as typically* defined…in this/these scenario’s

<table>
<thead>
<tr>
<th>Function</th>
<th>Main Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Program Management</strong></td>
<td>Oversight of the contract vehicle and the specific Deliveries or Taskings; Main customer interface for satisfaction and ongoing business development</td>
</tr>
<tr>
<td><strong>Project Management</strong></td>
<td>Management of specific Delivery Orders / Task Orders and the resources that perform the technical and management requests of the customer</td>
</tr>
<tr>
<td><strong>Contracts</strong></td>
<td>Expert in government contracts establishment and change management or maintenance</td>
</tr>
<tr>
<td><strong>Pricing</strong></td>
<td>Pricing for all direct charges to the original contract and any change orders</td>
</tr>
<tr>
<td><strong>Subcontracts</strong></td>
<td>Fulfillment of resource requests from partner companies for expertise in support of Deliveries/Taskings</td>
</tr>
<tr>
<td><strong>Finance</strong></td>
<td>Establishment and change management of budget; Regular ongoing performance reporting to Program/Project Management and Customer(s)</td>
</tr>
</tbody>
</table>

*Your company may define these entities differently, or combine them; they are here to assist in the depiction of this CMMI-SVC implementation approach / example
## Current Situation - 2: What is the “PMO”?

### Program Management Office Functional Groups – continued

<table>
<thead>
<tr>
<th>Function</th>
<th>Main Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquisition/Procurement</td>
<td>Materials procurement (and management) in support of Delivery/Task Orders</td>
</tr>
<tr>
<td>Facilities</td>
<td>Ensuring contract resources (onsite and govt site) have office space and equipment; Oversight of current company (onsite) facility and any issues or requests</td>
</tr>
<tr>
<td>Security</td>
<td>Handles security clearance and security logistics and access for all resources both here and abroad</td>
</tr>
<tr>
<td>Recruiting</td>
<td>Procurement of new hires to fulfill corporate positions and new requests for contract support</td>
</tr>
<tr>
<td>Human Resources</td>
<td>Onboarding and training for resources</td>
</tr>
<tr>
<td>Quality Assurance</td>
<td>Ensuring quality in each Functional Group and Project processes/deliverables</td>
</tr>
<tr>
<td>IT</td>
<td>Computer (Hardware &amp; Software) procurement, configuration, and support for onsite resources</td>
</tr>
</tbody>
</table>
Current Situation - 3

PMO Operations

Focus on “customer service” without defining “who is the customer”

Accepting Requests for services from any source in any way

Ignoring linkage to business goals

Lacking communication & coordination with one another

Lacking understanding of current performance

Lacking understanding of a “Project” and how they relate to it
Current Situation – 4: Typical Problems

People
- Feel like everyone comes to them with a business or customer “priority”
- Frustrated at their jobs
- Not fully trained
- Work as firefighters, not as a team
- Not coached or mentored
- Lack open communications, respect
- Do not understand where they belong – under an organization and structure
- Are constantly overburdened

Process
- Are not using a well documented and repeatable standard process
- Processes that exist are not deployed/trained in a timely fashion or to the appropriate groups
- Little or no SLA’s and measures are in place
- Continuous improvement is not a widely understood
- QA process rarely occurs and perception is “policing” and negative
- Best practices are rarely developed, and not typically shared, and refined

Technology
- Tools exist, but are not documented
- People have not been trained and are not using them consistently
- Requests, Problems, Changes, and Issues are not captured, tracked and managed
- Not easily accessible by people when out of the office - at home or on the customer site
- Version updates are pushed out without notification
Questions that Needed Answers

- We use CMMI-SVC Process Areas to answer the following questions?
  - What are the requirements for the PMO and all functional groups within it?
  - How do we estimate and allocate resources for a project?
  - How do we measure improvement?
  - What is a Service Request – how do we handle each one?
  - What can we promise within a Service Level Agreement to the end customer?
  - What is our current capacity and availability and how do we estimate and forecast - for “project” work and new proposals?
Scoping
Scoping Challenges

Typical scenario – everyone is maxed out so….

• Where do we begin?
  – It’s a big model, what are our most important issues or business objectives?
  – It’s a big company, where are we going to focus our initial efforts?
  – How much improvement is too much?
  – How can we achieve (and show) smaller and/or shorter term success?

• How should we organize the improvement infrastructure?
• Who should be involved in the improvement strategy, plan, creation and implementation?
• How do we get started?
Getting Started – 1: Define Basic Terminology

We could not begin until we made sure we had agreement on some basic common terminology:

Program* – a collection of related projects and the infrastructure that supports them, including objectives, methods, activities, plans and success measures. **In our language** – “The Award” – The **Contract Vehicles** that were proposed outlining management objectives and techniques for the customer

• Contract level (very high level) requirements and management activities
• Success criteria/measures – but no actual funding, but a bucket of $$

Project* – a managed set of interrelated resources that delivers one or more products or services to a customer or end user. **In our language** – the awarded **Delivery/Task Orders** within a Program/Contract Vehicle that outlines specific work, resources and deliverables and is “funded”

• Task Order level requirements for resources and services
• PMO related schedule of status and performance

* CMMI-SVC Glossary
Getting Started – 2: Define Basic Terminology

Requirements* – a condition or capability needed by and end user to solve a problem or achieve an objective; a condition or capability that must be met or possessed by a product, service to satisfy a supplier agreement, standard, specification, or other formally imposed documents.

Represented by contractual agreements such as:

- Technical Execution Plan (TEP or RTEP)
- Program/Project Work Statement (PWS)
- Statement Of Work (SOW)

* CMMI-SVC Glossary
Service Request* – a communication from a customer or end user that one or more specific instances of service delivery are desired. In our language, they are:

- Task Order Requirements
  - Requests for resources (a “body” to fill a Labor Category)
  - Requests for management services for the contract (e.g., regularly scheduled meetings and management reports)
- Contract Modification Requests
- Internally generated requests / changes
- Request for proposal

Note: A request typically requires many, if not all functional groups (Pricing, contracts, finance, subcontracts, recruiting, etc.) to play a role in providing the Program/Project managers with the information and deliverables they need to answer the customer request

* CMMI-SVC Glossary
Scoping Decisions - Where Do We Begin?

Divide and Conquer!!!

1. Improvement in Phases
   - Phase 1: “Above the line” - PMO Operations (on-site at company x)
     • Will allow us to control two factors:
       - Customer Satisfaction – Many contracts won initially and on re-compete with how we can manage the contract activities to maintain and improve customer satisfaction
       - Deliverable control – we can show shorter-term success by separating “controllable” groups and activities from “uncontrollable” ones – IDIQ-based projects
   - Phase 2: “Below the line” - Project team processes (customer site and typically IDIQ related activities), some covered by CMMI-DEV
Scoping Decisions: The Organizational Unit

Phase 1 – PMO Operations
Services Improvement

- Contract X Program Management & Support
  - Task Order / Project X1
  - Task Order / Project X2

- Contract Y Program Management & Support
  - Task Order / Project Y1
  - Task Order / Project Y2
  - Task Order / Project Y3

- Contract Z Program Management & Support
  - Task Order / Project Z1
  - Task Order / Project Z2

Support = Contracts, Finance, Pricing, Subcontracts, Quality, Security, Acquisition, Facilities, HR/Recruiting, etc.

Phase 2 – Project Team
Services Improvement

- Project Staff
- Project Staff
- Project Staff
- Project Staff
- Project Staff
- Project Staff
Divide and Conquer!!!

2. To utilize our prior experience with CMMI-DEV, structure (or keep) a similar PI infrastructure
   - Divide the improvement activities into PMO Entities – “Functional Groups” (e.g., Program/Project Management, Finance, Pricing, Subcontracts, etc.);
     - Utilize a familiar improvement infrastructure
     - Utilize the FG leads as EPG members
     - Design PATs around those functional groups

3. Enables Functional Groups (FGs) to be autonomous in many of their own improvement activities while contributing to Organizational Unit level improvement
Scoping Decisions – Who, What, How?

CMMI-SVC: Performance Improvement Team Structure

Formal PI Infrastructure:
- Charters
- Some Common Measures
- Regularly Scheduled Meeting
- Hard Deliverables/Action Item Tracking
- Weekly/Monthly Status Reports to ESC/Sponsor
Position for Performance Improvement

Ongoing Performance Improvement - Simple Flow

- Senior Management, Services Performance Improvement Team (SPIT)
  - Changes and Improvements
  - Performance Analysis

- Organization’s Standard Process and Assets
  - Historical Data as input to Estimation & Tailoring (for each new contract)
  - Functional Group’s Defined Process
    - Actuals, Results Lessons Learned Reviews & Audits

- Performance Results

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Some Steps Toward Improvement
Step 1 – Identify the Target

Collect baseline data

- Perform a baseline appraisal - SCAMPI C (or SCAMPI B) using SPIT and/or PAT team members - this front-end investment will pay off over the long run
  - Increased organization knowledge of what is required and why
  - Assistance in breaking down barriers to improvement activities
- If the appraisal does not include interviews, hold meetings or focus groups or do a survey to understand all the current issues/frustrations/”pain points” – from everyone’s perspective
- Collect any measures of current performance – may require some data mining or a Cost of Quality Appraisal/Project Retrospective
Step 2 – Strategize the Transformation

Appraise Phase
- Sponsorship
- CMMI Training
- Baseline Appraisal
- SPIT Workshop
- Planning Sessions
- CMMI Process Implementation
- Tools Implementation
- Training
- Internal QA Audits
- Mock SCAMPI A
- SCAMPI A

Plan Phase
- AT Training
- CoQ Appraisal
- Tools Appraisal

Execute Phase
- Personnel Appraisal
- Project Review

Transition Phase

APEX Transformation Methodology – by cognence
Step 2 – Strategize the Transformation

Why?

• To rapidly collect appropriate levels of information and identify:
  • Opportunities for improvement
  • Barriers and risks to the improvement effort
• To understand the As-Is – current health and maturity levels
• To determine the To-Be – improvement that can be achieved through application of best practices
• To identify short term wins and long-term direction
Step 3 – Approach from Top-Down & Bottom-Up

Multi-dimensional nature of implementation includes definition at the EPG/SPIT level as well as each Functional Group level

1. SPIT defines:
   - High level strategic items (driven, with input from the Executive Steering Committee)
     - Needs, capabilities, objectives
     - External Customer(s)
     - Common measures – customer facing SLAs
     - Common tools
     - Overall planning and implementation approach
     - Integrated training materials and plans

2. Each Functional Group defines:
   - Specific items that define Functional Group operational processes
   - Specific training – for Functional Groups members and for interfacing FGs
Step 3 – Example: Service Delivery

1. SPIT defines:
   - Service Request from the customer or customers to projects
   - General guidelines for identifying and managing service requests
   - High Level Flow for each request type

2. Each Functional Group defines:
   - FG flow for each request type
   - Process and tools for identifying and managing each request type
   - Identification of any additional requests (that may be particular to the FG)
Step 3 – Example: Measurement & Analysis

1. SPIT defines:
   - Business Objectives
   - Common measures to support business objectives
   - Measurements reports provided from the PMO to the Customer(s)
     - Aggregation of Functional Group Measures and other Contract supporting measures
   - Integrates Functional Group measures into Customer reports

2. Each Functional Group defines:
   - Specific measures that will trace FG process to overall business objectives
   - Measurements provided to the organization (internally) e.g.,
     - Request response time
     - Request throughput
   - Details of collection, storage and analysis processes
Step 3 – Example: Configuration Management

1. SPIT defines:
   - Organization Repository
   - General change control guidelines

2. Each Functional Group defines:
   - Their group CI’s – documents, deliverable and internal
   - Specific storage, archival and access
Step 3 – Example: Strategic Service Management

1. SPIT defines:
   - Business Objectives
   - Business Capabilities, Strategic Needs
   - Customers (External)
   - Services provided from the PMO to the Customer(s) – catalog of services

2. Each Functional Group defines:
   - Customers – which include other Functional Groups (Internal & External)
   - Functional Group Capabilities
   - Functional Group Business Process Flow
   - Specific FG services – cataloged
1. SPIT defines:
   - General guidelines for establishing a strategy for capacity and availability
   - Guidelines for aggregating measures to manage (analyze and report) capacity and availability

2. Each Functional Group defines:
   - Specific strategy to handle FG capacity and availability
   - Estimation methods (used for PP as well) for pricing
   - Specific measures and tools for monitoring and reporting FG capacity and availability
Step 4 – Show The Benefits

• Sample Performance Improvement Success Story

1. Development of measures and standard processes for the way they deliver services support within their Functional Group – handling requests

2. They measured their service request cycle times and have made significant improvement:

   - Reductions in cycle times:
     - 31% - Subcontract Processing
     - 69% - Modification processing
     - 85% - Task Order Processing

   - Increase in Capacity
     - 350%

<table>
<thead>
<tr>
<th></th>
<th>Throughput</th>
<th>TAT (# Days)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2008</td>
<td>2009</td>
</tr>
<tr>
<td>Subcontracts</td>
<td>69</td>
<td>182</td>
</tr>
<tr>
<td>Modifications</td>
<td>979</td>
<td>3513</td>
</tr>
<tr>
<td>Task Orders</td>
<td>171</td>
<td>624</td>
</tr>
<tr>
<td><strong>Total Capacity</strong></td>
<td>1219</td>
<td>4319</td>
</tr>
</tbody>
</table>
Step 4 – Show The Benefits

Other Benefits:

• The use of CMMI-SVC enabled us to do what the CMMI-DEV did not – use (i.e., manage) the “Service Request”

• Top-Down, Bottom-Up Improvement allows folks at various levels of the organization some “say-so” which achieves buy-in

• Once the folks who participate in providing the service know how they relate to the end customer as well as their direct customers, request handling is much more simplified/understood and easier to measure

• Provides functions autonomy as well as participation in the overall business performance improvement – effective service delivery to the end customer
Step 5 – Learn Your Lessons

“First Time “Victim”, Second Time “Volunteer”!

• Not defining the basic terminology first
  – And don’t forget to identify the “customer” and the “requests”…..all of them
• Not keeping to a “KISS” principle
  – Focus on simple processes and put more effort into training and mentoring through deployment
• Taking on too much too soon
  – Put a realistic schedule into place and account for already overtaxed resources
  – Look for small, but meaningful wins (use the FG that the organization complains about the most to show improvement) to get the most “converts”
• Not cataloging resistance factors, risks, issues
  – Keep a centralized, easily accessible repository so Individuals and Functional Group PATs can document items and EPG/SPIT can work to resolve them
• Too much multitasking – attempting to do process in the margins
  – Outline a spend plan, track it, report it and get management to act
• Insufficient membership and skills
  – Ensure process improvement teams have adequate skill sets
  – “Seed” the organization with folks who will carry the “banner”
• Failure to maintain momentum (i.e., visibility)
  – Weekly and Monthly Status
Pat Mitryk

cognence, inc.
Improving Software Economics

www.cognence.com
pat_mitryk@cognence.com
732.804.6410