Applying CMMI-SVC to Process Management

Allen Eagles
Lynn Penn
Dorna Witkowski
Agenda

• Process Management introduction
• Planning
• Implementation
• Results
• Plans ahead
Process Management

• Reports to the CTO/Engineering & Technology
• Responsible for:
  – Standards and model assessment, internal and external
    • CMMI, ISO, AS9100
    • Tools to support assessments: Common Audit Database, Program Profile Database, etc.
  – Best Practice Libraries, R&D process support, process collaboration with Product Lines, Policy board chair and facilitation
  – Performance Analytics tools and metrics
  – Lean/Six Sigma Operating Excellence
• Reorganized in 2010 to be more service and project focused
Company

Executive Vice President

Product Lines
- PL1
- PL2
- PL3
- PL4

Chief Technology Officer
- IRAD
- Tech Centers
- Cyber Security
- Engineering

Functions: HR, CIO, Finance, etc.

Process Management

Notional
Process Management
Service Initiatives

• CMMI:
  – Provide training, consulting, SCAMPI B/C preparation and execution, SCAMPI A preparation and support

• ISO and Management Systems:
  – Provide training, consulting, internal auditing, process monitoring, supervision of ISO and AS9100 audits

• Performance Analytics
  – Establish baselines; perform benchmarking, monitoring, control, cost and schedule modeling, affordability and productivity, basis of estimates, predictive analytics

• Operating Excellence – Lean/Six Sigma:
  – Provide Lean/Six Sigma training, event facilitation, process improvement reporting, Product Line process improvement facilitation

In 2010 each initiative was required to create a project plan, a schedule, and a service catalog
Why use CMMI-SVC

• To provide better service to our internal customers
• To become more disciplined
• To establish continuity
• To conform to what we expect from our programs
• To expand knowledge of problems and issues we might face from practitioners
Quick Overview of CMMI-SVC
Specific Process Areas

• **Service Delivery (SD)** – Deliver services in accordance with service agreements

• **Capacity and Availability Management (CAM)** – Ensure effective service system performance and ensure that resources are provided and used effectively to support service requirements

• **Incident Resolution and Prevention (IRP)** – Ensure timely and effective resolution of service incidents and prevention of service incidents as appropriate

• **Service System Transition (SST)** – Deploy new or significantly changed service system components while managing their effect on ongoing service delivery

• **Service Continuity (SCON)** – Establish and Maintain plans to ensure continuity of services during and following any significant disruption of normal operations

• **Service System Development (SSD)** – Analyze, design, develop, integrate, verify and validate service systems, including service system components, to satisfy existing or anticipated service agreements

• **Strategic Service Management (STSM)** – Establish and maintain standard services in concert with strategic needs and plans
Planning the CMMI-SVC Gap Analysis

• **Scope:**
  – Within Process Management – only our 4 major initiatives and management
    • Did not cover tools and other services
  – Within the model – only looked at the specific practices of the Service PAs
    • Including the addition, Service System Development
Planning the CMMI-SVC Gap Analysis

• **Sequence of Process Areas to review:**
  - **Phase 1:** Service Delivery, Incident Resolution (and Prevention), Service Continuity
    • We focused on process areas where evidence was available
  - **Phase 2:** Service System Development, Strategic Service Management
    • As the year progressed, there was time to show evidence of strategy and development of new or modified services
  - **Phase 3:** Capacity and Availability Management, Incident (Resolution and) Prevention, Service System Transition
    • Most challenging for a small service group
Planning the CMMI-SVC Gap Analysis

- **Method** – work product focus
  - Study the CMMI-SVC Process Area
  - Consider Specific Practice Work Products in the model
  - Look at *Process Management Work Products*
    - That will meet the intent
  - Interview Project Leads to identify gaps
  - Map the collected data to the Specific Practices
  - Publish the gap analysis, assign actions and work to closure
  - Track completion of action plans
Implementation of the Plan

Sample interpretation of work products and gap analysis

Service Delivery SP 2.1 Establish the Service Delivery Approach

Model has example work products:

- Service delivery approach
- Contact and roster lists
- Service request criteria
- Internal and external status reporting

Initially, looked for *Process Management work products*:

- Documented service approach
- Contact and team member lists
- Customer and senior management status reports
Implementation of the Plan

Sample interpretation (continued)

*Actual* work products found:

- Service delivery approach provided in project plan

  Service Delivery sample from Project Plan: Product Lines, Programs, or Senior Management may request the services identified in the Service Catalog. The CMMI project will provide staffing for the requested service and establish an agreement with the requester with respect to funding, timeframe of the service, work products to be provided with the service, and expectation of the results of the service.

- Contact list; Team member list
- Internal status reports
Implementation:

• Along the way, we met some resistance…
  
  • Critical milestones such as ISO Audits, Executive Directives, and Corporate Milestones interfered with implementation
    • “Don’t bother me I’m too busy with this ISO Audit.”
  
  • Limited staff delayed resolution of actions
    • “I don’t have time to do this, one of my 2 staff members was reassigned and I’m behind in my schedule.”
    • “With only 2 and ½ people I don’t think my project meets the definition of a service as referenced in the model!”
  
  • Perceptions
    • “I don’t need to test continuity, I have everything on our web site.”

Now we’re prepared for programs!!
Implementation:  
...and acceptance

• Showed project leaders why certain activities identified in the service-specific process areas can actually benefit them, their project, and their customers
  – Examples:
    • Tested continuity plans, with reported results
    • Incidents tracked and workarounds determined; future analysis planned
    • Guidebook on developing / revising a service
Results

• Interpretation of the model
  – Implementing the model didn’t require fancy tools, spreadsheets, etc.
  – We held a brainstorming session to define “Incidents” for our service initiatives

• Methodology
  – We adjusted our methodology along the way
    • Changed planned sequence of PAs after phase 1
    • In later phases, spent more time on pre-interview discovery to look for evidence already available
    • Adjusted methods when we found true systemic gaps for SSD and IRP
Results

• Gap Analysis – systemic problems
  – No documented approach to developing a new service
  – No documented continuity plans
  – Incidents not defined
  – Incident tracking not defined
  – No formal service level agreements to set expectations
Results

- Developed and published service catalogs for each project area and the other services we offer
Results

• Established incident and request logs
Results

• Established continuity plans and tested the plan

Service Continuity Plan for CMMI Project

The essential functions of the CMMI Project include performing as team member in planning and performing SCAMPI/Class B’s and C’s. These are the functional and customer's schedules and may impact their business goals.

The essential resources of the CMMI Project are the staff performing the work. They use their resources to perform these functions.

All pertinent files and information will be stored in the Process Management folder.

- Exceptions are Risk Management files and MOR files which are stored in the Process Management Unit Site in other standard folders.
- This should include all work-in-progress files for planned work.
- Users sites are backed up on a daily basis by Enterprise Business Systems.

The CMMI Project Lead’s back-up is the Director, Process Management.

- On a periodic basis, the CMMI Project Lead will ensure the Director knows of all current activity. This can be done at weekly face-to-face Monthly Operating Reviews, and through emails.

The back-up for CMMI Project staff doing planned projects for the CMMI Project Lead.

- On a periodic basis (nominally weekly), CMMI Project staff will report to the Lead their status of all activity, as well as points of contact for future activity.

Service Continuity Test – March 2019

Test #1: CMMI Project Lead Backup

Test conducted 3/7/10 – 3/11/10; black text is the test from the Service Continuity Plan; Aqua text is the result of the test.

Preparation:

- Identify 2 customers to participate in test
  - Maria Miller and Lloyd Brown from ISGS Defense support the test
- Identify 1 internal CMMI staff member to participate in test
  - Barbara Gershwind supported the test
- Tell Director, Process Management of test to be done
  - Director, Process Management was told the week before the test that it would be done
- CMMI Project Lead sets Out of Office message to have customers contact Director, Process Management for CMMI questions or activities
  - Out of office message set on Email and Voice Mail
- Contact customers and request that they email or call with questions on CMMI
  - Customers contacted
- Contact internal CMMI Staff member and request that he/she email or call with question on tasks
  - Internal staff member contacted
Results

• Established service agreements and received feedback from customers
Results

• Also:
  – Wrote guidance for developing services
  – Working on a service strategy for our entire business area
    • A service sample repository
    • Maps of service components to models and standards
What was easy to implement

• SD – Service Delivery
  – Providing our services in a more professional and organized manner

• The IR of IRP – Incident Resolution
  – Identifying and resolving incidents

• SCON – Service Continuity
  – Establishing and testing continuity plans

• SST – Service System Transition
  – Providing a new service in an orderly, controlled manner
What was easy to implement (cont.)

• STSM – Strategic Service Management
  – Establishing plans, service catalogs and levels of service
• SSD – Service System Development
  – Although we didn’t have anything documented initially, following a standard method of developing new or modified services will provide a more disciplined and thorough method that we can easily follow
What is hard to implement

• CAM – Capacity and Availability Management
  – Although we know and can manage our capacity and availability, a “Service System Representation” is very difficult for a small people-related organization

• The P of IRP – Incident Prevention
  – Because incidents are rare and there is usually no commonality between them, it is difficult to establish prevention mechanisms
Plans

• Expand to Core Process Areas in 2011
• No plans for a SCAMPI B/C at this time as we are still working to close gaps
• Use the experience gained for future adoption across the business area
Questions