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An Overview of CMMI® for Services

How It Differs from CMMI-DEV and How to Apply It in Different Environments

Source: SEI's CMMI for Services (CMMI-SVC) Overview Presentation Sept. 2008

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Why the Need for CMMI for Services?

- A variety of potential stakeholders approached the SEI asking for help with services. Demand for process improvement in services is likely to grow
 - Services constitute more than 80% of the US and global economy.
- Many organizations are cobbling together their own ITIL + CMMI solutions, or ISO-9000 + CMMI. Constrained to IT.
- Agencies and companies are requesting that their service providers demonstrate a CMMI rating, but attempts to use CMMI-DEV in a service setting can distort the integrity of appraisal results.
- Service providers are looking for a consistent benchmark as a basis for process improvement that is appropriate to the work they do and is based on a proven approach.

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What Does CMMI-SVC Consist of?

- The CMMI Model Framework consists of 16 core process areas plus three sets of constellations
 - Development (CMMI-DEV)
 - Acquisition (CMMI-ACQ)
 - Services (CMMI-SVC)
 - Supplier Agreement Management is a shared process area between CMMI-DEV and CMMI-SVC
- Each constellation is focused on a particular capability
- CMMI-SVC is the most broad constellation since it does not deal strictly with systems and software.
 - Examples used by the SEI include banking, health care, education, and process consulting

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The Core Process Areas

Process Management	Project Management	Support
Organizational Process Definition	Project Planning	Configuration Management
Organizational Process Focus	Project Monitoring and Control	Process and Product Quality Assurance
Organizational Training	Requirements Management	Measurement and Analysis
Organizational Process Performance	Integrated Project Management	Decision Analysis and Resolution
Organizational Innovation and Deployment	Risk Management	Causal Analysis and Resolution
	Quantitative Project Management	

* Requirements Management is moving from an Engineering Process Area to a Project Management Process Area

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Process Areas for CMMI-SVC

CMMI-SVC PA	Category	ML
Capacity and Availability Management	Project Management	3
Incident Resolution and Prevention	Service Establishment and Delivery	3
Service Continuity	Project Management	3
Service Delivery	Service Establishment and Delivery	2
Service System Development	Service Establishment and Delivery	3
Service System Transition	Service Establishment and Delivery	3
Strategic Service Management	Service Establishment and Delivery	3

* Service System Development is an optional process area

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Releasing and Updating CMMI-SVC

- CMMI-SVC published in February 2009.
- There is a one-day supplement course for those that have taken the three-day Introduction to CMMI-DEV course.
 - Recently released a three-day Introduction to CMMI-SVC course.
- No SCAMPISM appraisal results taken by the SEI before September 2009.
 - No published cumulative reports on CMMI-SVC SCAMPI appraisal results yet.

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Highlights of the CMMI-SVC Process Areas

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Capacity and Availability Management (CAM)

- Ensure effective service system performance.
- Ensure that resources are provided and used effectively to support service requirements.
- This goes beyond resource planning and tracking in PP and PMC.
- It is an organization level process area.
- The organization should consider what it can handle before obtaining more business to ensure it can deliver.
- It addresses the "Hooray! We won. Oh no, we won." reaction many organizations have when winning major contracts.

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Capacity and Availability Management (CAM)

- Capacity is the degree to which one thing may support, hold, process, or produce another thing.
 - In the context of services, capacity may refer to the maximum amount of service delivery or maximum number of service requests that a service system can handle successfully within a fixed period of time.
- Availability is the degree to which something is accessible and usable when needed.
 - In the context of services, availability may refer to the set of times, places, and other circumstances in which services are to be delivered, service requests are to be honored, or other aspects of a service agreement are to be valid.

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Capacity and Availability Management (CAM)

- SG 1 – Prepare for Capacity and Availability Management
 - SP 1.1 – Establish a capacity and availability management strategy
 - SP 1.2 – Select measures and analytic techniques
 - SP 1.3 – Establish service system representations
- SG 2 – Monitor and Analyze Capacity and Availability
 - SP 2.1 – Monitor and analyze capacity
 - SP 2.2 – Monitor and analyze availability
 - SP 2.3 – Report capacity and availability management data

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Incident Resolution and Prevention (IRP)

- Ensure timely and effective resolution of service incidents and prevention of service incidents as appropriate.
- This could be thought of as a non-quantified version of CAR or defect tracking and resolution in software development.
- Focuses on resolving service interruptions with workarounds and then examining selected incidents to ensure they do not re-occur in the future.

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Incident Resolution and Prevention (IRP)

- Incidents are events that, if not addressed, eventually may cause the service provider organization to break its service commitments.
 - Hence, the service provider organization must address incidents in a timely and effective manner according to the terms of the service agreement.
- The term "incident" is used to mean "service incident."
 - Differentiate this specially defined term from the everyday use of the word "incident."

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Incident Resolution and Prevention (IRP)

- What would differentiate a “service incident” from other incidents in your organization?
- What would differentiate a “service incident” from an issue in a service delivery project?

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Incident Resolution and Prevention (IRP)

- SG 1 Prepare for Incident Resolution and Prevention
 - SP 1.1 Establish an Approach to Incident Resolution and Prevention
 - SP 1.2 Establish an Incident Management System
- SG 2 Identify, Control, and Address Incidents
 - SP 2.1 Identify and Record Incidents
 - SP 2.2 Analyze Incident Data
 - SP 2.3 Apply Workarounds to Selected Incidents
 - SP 2.4 Address Underlying Causes of Selected Incidents
 - SP 2.5 Monitor the Status of Incidents to Closure
 - SP 2.6 Communicate the Status of Incidents

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Incident Resolution and Prevention (IRP)

- SG 3 Define Approaches to Address Selected Incidents
 - SP 3.1 Analyze Selected Incident Data
 - SP 3.2 Plan Actions to Address Underlying Causes of Selected Incidents
 - SP 3.3 Establish Workarounds for Selected Incidents

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Service Continuity (SCON)

- Establish and maintain plans to ensure continuity of services during and following any significant disruption of normal operations.
- Significant disruptions are things such as hurricanes, earthquakes, terrorist acts, etc.
- It is based on many of the lessons learned from 9/11 organizational survivors.

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Service Continuity (SCON)

- Service continuity is the process of preparing mitigation for significant disruptions to service delivery so that delivery can continue or resume, although perhaps in a degraded fashion.
 - These practices describe how to prepare service systems and the resources they depend on to help ensure that a minimum critical level of service can continue if a significant risk is realized.
 - Part of service continuity is identifying which services cannot be disrupted and which can be disrupted and for what amount of time.
- The Service Continuity process area builds on the practices in the Risk Management process area.

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Service Continuity (SCON)

- SG 1 Identify Essential Service Dependencies
 - SP 1.1 Identify and Prioritize Essential Functions
 - SP 1.2 Identify and Prioritize Essential Resources
- SG 2 Prepare for Service Continuity
 - SP 2.1 Establish Service Continuity Plans
 - SP 2.2 Establish Service Continuity Training
 - SP 2.3 Provide and Evaluate Service Continuity Training
- SG 3 Verify and Validate the Service Continuity Plan
 - SP 3.1 Prepare for the Verification and Validation of the Service Continuity Plan
 - SP 3.2 Verify and Validate the Service Continuity Plan
 - SP 3.3 Analyze Results of Verification and Validation

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Service Delivery (SD)

- To deliver services in accordance with service agreements.
- Service agreements are to be written and binding.
- Only process area added to Maturity Level 2.
- Adding some discipline to actual service delivery instead of just assuming it happens.

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Service Delivery (SD)

- Service delivery covers establishing and maintaining a written agreement with customers.
 - A service agreement describes the service to be delivered to the customer, service level targets, and responsibilities of the service provider, customer, and end user, as appropriate.
- A service agreement may cover multiple services or multiple customers.
 - It can take the form of a service level agreement (SLA), performance work statement (PWS), statement of objectives (SOO), statement of work (SOW), or other type of agreement.
 - For very simple cases, it may be nothing more than a printed menu of services and prices.

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Service Delivery (SD)

- SG 1 Establish Service Agreements
 - SP 1.1 Analyze Existing Agreements and Service Data
 - SP 1.2 Establish the Service Agreement
- SG 2 Prepare for Service Delivery
 - SP 2.1 Establish the Service Delivery Approach
 - SP 2.2 Prepare for Service System Operations
 - SP 2.3 Establish a Request Management System
- SG 3 Deliver Services
 - SP 3.1 Receive and Process Service Requests
 - SP 3.2 Operate the Service System
 - SP 3.3 Maintain the Service System

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Service System Development (SSD)

- Analyze, design, develop, integrate, verify, and validate service systems, including service system components, to satisfy existing or anticipated service agreements.
- Only optional process area added to CMMI-SVC.
- Essentially brings all the CMMI-DEV Engineering process areas into a single process area.
 - Much like SAM encompasses all the CMMI-ACQ process areas

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Service System Development (SSD)

- A service system is an integrated and interdependent combination of service system components that satisfies stakeholder requirements.
 - A service system component is a process, work product, person, consumable, or customer or other resource required for a service system to deliver value.
 - People who perform tasks as part of the service system, including provider staff and end users, enable the system to operate and thereby deliver services.
- A service system consumable is anything usable by the service provider that ceases to be available or becomes permanently changed by its use during the delivery of a service.

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Service System Development (SSD)

- What service systems do you have in place?
- What components comprise that service system?

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Service System Development (SSD)

- SG 1 Develop and Analyze Stakeholder Requirements
 - SP 1.1 Develop Stakeholder Requirements
 - SP 1.2 Develop Service System Requirements
 - SP 1.3 Analyze and Validate Requirements
- SG 2 Develop Service Systems
 - SP 2.1 Select Service System Solutions
 - SP 2.2 Develop the Design
 - SP 2.3 Ensure Interface Compatibility
 - SP 2.4 Implement the Service System Design
 - SP 2.5 Integrate Service System Components

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Service System Development (SSD)

- SG 3 Verify and Validate Service Systems
 - SP 3.1 Prepare for Verification and Validation
 - SP 3.2 Perform Peer Reviews
 - SP 3.3 Verify Selected Service System Components
 - SP 3.4 Validate the Service System

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Service System Transition (SST)

- To deploy new or significantly changed service system components while managing their effect on ongoing service delivery.
 - “Significant” is defined as a change that introduces unacceptable risk that the service system will not meet its objectives.
- Can apply when moving from one service provider to another to ensure a seamless transition.
- “Service system components” encompasses everything required for service delivery, including people, work products, processes, infrastructure, consumables, and customer resources.

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Service System Transition (SST)

- SG 1 Prepare for Service System Transition
 - SP 1.1 Analyze Service System Transition Needs
 - SP 1.2 Develop Service System Transition Plans
 - SP 1.3 Prepare Stakeholders for Changes
- SG 2 Deploy the Service System
 - SP 2.1 Deploy Service System Components
 - SP 2.2 Assess and Control the Impacts of the Transition

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Strategic Service Management (STSM)

- To establish and maintain standard services in concert with strategic plans and needs.
 - Analyze capabilities and needs for services that span multiple customers and agreements
 - Establish and maintain standard services, service levels, and descriptions that reflect these capabilities and needs
- Connects the services being provided to the business objectives of the organization.
 - If the organization is small or has a narrow focus, the standard services may consist of a single service or small related group of services.
- Allows for the forecasting of direction so that new services can be identified and planned.

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Strategic Service Management (STSM)

- SG 1 Establish Strategic Needs and Plans for Standard Services
 - SP 1.1 Gather and Analyze Relevant Data
 - SP 1.2 Establish Plans for Standard Services
- SG 2 Establish Standard Services
 - SP 2.1 Establish Properties of Standard Services and Service Levels
 - SP 2.2 Establish Descriptions of Standard Services

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Let's Talk About an Example

Operating a Help Desk
Starting a Pizza Delivery Service
Providing Lawn Care Service

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Implication of Services Process Areas

- Strategic Service Management
- Capacity and Availability Management
- Incident Resolution and Prevention
- Service Delivery
- Service System Development
- Service System Transition
- Service Continuity

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Appraising with CMMI for Services

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Appraising with CMMI-SVC

- Use the SCAMPI method for performing appraisals.
 - Get Maturity Level or Capability Level ratings if desired.
- SCAMPI appraisal team members must attend introduction to CMMI-SVC training.
 - Either the three-day Introduction to CMMI –SVC course or the three-day Introduction to CMMI course plus the one-day Services Supplement for CMMI course.
 - Must also attend the SCAMPI appraisal team training course.
- Challenge in identifying what a “project” is for some of the core process areas.
- Unclear if government will recognize CMMI-SVC results for CMMI requirements in RFP but early indications are that they will.

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MOSAIC Is Here to Help

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MOSAIC CMMI-SVC Services

- MOSAIC has SEI-certified CMMI-SVC SCAMPI Lead Appraisers and Instructors
 - Performing SCAMPI appraisals
 - Providing CMMI-SVC classes
- Consulting on how to appropriately interpret the CMMI-SVC for your environment

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