PM Architecture Design as a Critical Success Factor in CMMI Model Implementation

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Christen M. MacMillan, PMP
Implementing CMMI into Your Organization

• Most CMMI efforts begin with noble intentions and senior management support:
  – Indicates a desire to improve, streamline and standardize how the organization does business and delivers quality
Implementing CMMI into Your Organization

• So why do CMMI initiatives fail after they’ve been authorized and resources allocated?

• What can you do to avoid the pitfalls?
Reasons Authorized CMMI Efforts Fail

1. Competing motivators within the organization

2. The process implementation design was not well conceived
Desire to Improve vs. Desire to Win New Business

Competing Motivators

Executives
- Win New Business
- Achieve Rating
- Cost Efficiency
- Realists

VS.

Quality Organization
- Improve Delivery
- Improve Quality
- Mature Org Process
- Idealists

- Executive sponsorship for CMMI is often initially more greatly influenced by obtaining a maturity level, rather than maturing the organization.
  - Pressure to obtain a rating
  - Gain competitive advantage
  - Meet customer requirements
  - Shorter time requirements

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Moving Beyond the “Maturity Rating Motivator”

Executive Sponsorship Continuum

Motivators

- Get the Rating
  - Signed authorization
  - Some resources assigned

- Competitive Advantage
  - Champion: fully funded & resourced

- Improve Quality
  - Stakeholders held accountable & actively engaged in key decisions

Characterization

Lacks
- Champion & Enforcement
1. Competing motivators exist within the organization

2. The process implementation design was not well conceived
Reasons Implementation Designs Fail

- Do not support business goals or solve business problems
- Do not plan for managing organizational change
- Do not consider other factors influencing the way the organization does business
- Do not factor other quality model process requirements (i.e. ISO registrations, ANSI 748)
- Do not account for customer constraints
- Do not account for cost and resource constraints
- Provide no mechanism to lead the effort or govern and oversee adherence
- The Process Design is bigger or more complicated than the organization needs or can handle
Reasons Implementation Designs Fail (Cont’d)

- Do not obtain stakeholder buy-in on approach, methods, and priorities
- Incomplete business requirements
- The design rationale is not fully planned and communicated
- Lack of Planning
- Lose sight of the end goal
What is the End Goal??

To Improve Project Performance, Delivery, and Quality!!
Building Your Solution: Quality Enterprise Architecture

 QUALITY MANAGEMENT SYSTEM

 CMMI  ITIL  ISO  6 Sigma

Project Management Methodology

Required process rigor (greater rigor = less allowable tailoring)

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### PM practices against CMMI process areas

*note: diagram does not represent complete mapping*

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Building Your Solution: Solution Steps

- Select & Define Your PM Framework
- Develop Your PM Methodology
- Establish a Governance System
- Ensure Solution Meets Business Needs
Solution Step 1: Select & Define Your PM Framework

A Framework provides the basic architecture for the Project Management Methodology

- Assess the organizational dynamic and current PM competency and processes
- Evaluate known frameworks (i.e. PMBOK, home-grown)
- Identify synergies between CMMI PA requirements and other quality best practices and map to your business needs
- Weight process attributes and level of rigor desired up front
- Assess the characterization of your project portfolio
  - Short, rapid IT development or long term high risk combination efforts?
  - Solution Buyer or Solution Provider?
Key Attributes of an Effective PM Framework

• Enables achievement of project objectives and goals
• Establishes foundation for monitoring and controlling project performance
  – Identifies early performance indicators
  – Identifies performance shortfalls
  – Supports methods for corrective and preventative actions
• Supports implementation of a standardized, but tailorable methodology that facilitates quality and timely development and delivery of products and services.
• Is flexible enough to integrate with other quality best practices, models, and most commonly used SDLC’s
  – Build in a way that other quality models, frameworks, and best practices can be “snapped on” and integrated as business needs change and evolve.
Key Attributes of an Effective PM Framework (cont’d)

• Sets foundation to communicate measures and roles and responsibilities

• Supports earlier stakeholder and executive visibility into performance

• Establishes or supports requirements for PM repository and PAL

• Identifies process interfaces

• Defines PM process and procedural requirements, standards and policies that:
  – Comply with the CMMI Model
  – Comply with Business Requirements
    • Which meet business objectives
Building Your Solution:
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A PM Methodology is the culmination and elaboration of practices and methods by which project management is executed

- Elaborate on standards and requirements defined in framework/s
- Develop processes, procedures and supporting documents
- Choose a specific PM Practice and follow the logical progression of that thread
- Prioritize PM practice areas and implement in phases
- Begin with a PM practice that helps solve immediate &/or significant problems
Building Your Solution: Solution Steps

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Solution Step 3: Establish a Governance System

A Governance System Should:

- **Consider authorizing/creating a PMO to:**
  - Facilitate identification of project improvement recommendations
  - Mentor “users”
  - Perform project/program audits to evaluate project/program health (i.e. PfM)
  - Identify corrective and preventative actions
- **Establish Quality Organization to**
  - Perform process quality audits
  - Identify corrective and preventative actions
- **Enable earlier identification and resolution of risks**
- **Help enforce defined process requirements**
- **Establish requirements for process improvements & corrective actions**
- **Provide an independent escalation chain to executive management**
- **Facilitate communication between business operations & line management**
Building Your Solution: Solution Steps

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Solution Step 4: Ensure Solution Meets Business Needs

- **Continuously Evaluate the Effectiveness of the Implementation Approach:**
  - Ensure defined goals are being achieved as planned
  - Identify performance variances against plan and take corrective action
  - Ensure resource utilization is still appropriate
  - Let Process Improvement Process work

**Demonstrate Business Value of Solution:**
- Measurably improve overall performance and productivity
- Standardize business processes
- Reduce chaos

- **Translate Solution into Business Terms:**
  - Reduce costs
  - Increase the rate of successful projects or business initiatives

EXAMPLE

- **The Value of Estimation Practices to Those Who Must Implement**
  - Helps ensure defendable, retraceable estimates via a standardized method and documented BOE (basis of estimate).
  - Sets and communicates stakeholder expectations, system/performance boundaries, requirements definition
  - Facilitates better scope definition
  - Defines criterion for change

- **The Value of Estimation Practices to Executives**
  - Reduces financial and legal risk—particularly for FFP contracts or on projects where financial resources are limited
  - Reduces cost & schedule over-runs
  - Increases win rate
  - Produces more timely & better identification of requirements
  - Improves customer satisfaction through quality & timely project delivery
The Value of a PM Focus Up Front

- Sets foundation for and feeds into CMMI process area requirements
- Demonstrates early value by providing business leadership, sponsors, project teams, with measurable, repeatable performance results before committing to full cost
- Can be tailored at an organizational level to accommodate other quality process models/best practices/frameworks: ITIL; ISO; 6 Sigma, etc.
- Fosters improved communication and defined roles & responsibilities
- Trains project teams to work within a defined process framework
  - Realize value faster: motivate vs. pull
- Facilitates smoother management of organizational change
The Value of a PM Focus Up Front (cont’d)

• Improves performance faster and “motivates” resisting stakeholders to get on board.
• Unifies stove piped organizations.
  – PM impacts or is impacted by business operations
• Establishes foundation by which your CMMI project can be managed!
  – Provides opportunity to continuously improve your new PM processes
• Key driver behind solution and service success or failure
• Increases institutionalization success
• Reduces risk of process regression after a successful appraisal
• CMMI requires other elements be met, but you cannot meet any CMMI required element without executing project management practices
War Stories…

… on the road to a successful CMMI Level 3 Appraisal

The Challenge:

• Developing a unified architecture that recognized many pre-existing formal and informal processes
• Deciding how to fix gaps identified in SCAMPI B
• Different perspectives on the methods, and level of process rigor needed to meet requirements
The Solution:

- Established a Process Action Team (PAT) to modify existing PM Process Framework
- The PAT included representation from the implementing teams who helped design the solution
- Leverage and build upon existing PM Processes

The Result:

- Resolved most shortfalls
- Achieved a Successful CMMI Level 3 appraisal!
Lessons Learned

- Develop your PM Framework & Methodology first
- Plan your CMMI Implementation with the entire organizational process architecture in mind when possible
- Don’t try to eat the whole elephant at once:
  - Implement good enough for now; improve process later
- Implement a governing organization to oversee both Quality Process Adherence and Project Health
  - Poor Project Performance could be an indicator that key CMMI requirements have not been appropriately followed
- Develop user-friendly process assets and repository (PAL)
- Understand the dynamics, structure and culture of your organization
- Plan continuous improvement activities to ensure your approach is both CMMI compliant and meets business needs
- Be prepared for resistance and know its source/s
- Balance quick hits with tackling your biggest problem areas
- Communicate, educate, listen & be proactive!
Thank you!

Christen MacMillan, PMP
Senior Quality Process Manager
L-3 Communications, EITS
Reston, VA
703/434-4202 (Office)
703/798-2852 (Mobile)