Strategies for Implementing the CMMI Project Management Process Category

An SEI Transition Partner

Objectives

Attending this presentation should enable you to:

1. Understand how differing perceptions of project management makes this process category so difficult to implement

2. Consider common organizational roadblocks to project management that nearly every organization encounters

3. See the value of an incremental approach to implementation

4. Take away practical examples as a starting point

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Project Management Process Category

The PM Process Category consists of :

- ❑ Project Planning (PP)

- ❑ Project Monitoring & Control (PMC)

- ❑ Supplier Agreement Management (SAM)

- ❑ Integrated Project Management (IPM)

- ❑ Risk Management (RSKM)

- ❑ Quantitative Project Management (QPM)

Why is PM so difficult?

There are two root causes of most problems implementing project management:

- ❑ "Project Management" means different things to different people

- ❑ Implementing project management usually impacts every aspect of the organization:
  - ❑ Engineering
  - ❑ Senior management
  - ❑ Contracts, purchasing, legal
  - ❑ Human resources
  - ❑ Finance
  - ❑ Marketing & sales
  - ❑ Customers

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"Project Management" as Viewed by Senior Managers

- ❑ "It's common sense … doesn't require special training or education … anyone can do it."

- ❑ "It requires minimal effort … the engineers already know what needs to be done."

- ❑ "If project managers are doing their job, I shouldn't have to be involved."

- ❑ "Project management is just walking around talking to people … what's the big deal?"

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Project Management as Practiced by "PMs" (who aren't really PMs!)

Plan

Actual

Gee … I never saw that coming!

PMs who are not trained are "victims" of "surprise" circumstances instead of planners and agents of action.

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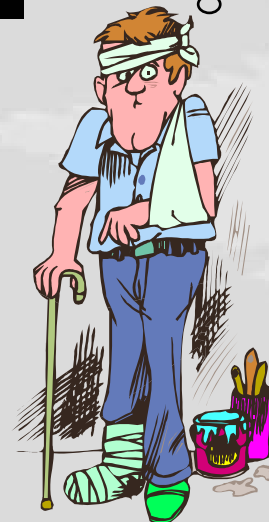
"Project Management" as Practiced by PMs (who aren't really PMs!)

- ❑ **PM is just paperwork**: Plans and schedules are created (to show off documentation), but aren't maintained or used to make decisions.

- ❑ **Hope is the strategy**: Wishful thinking prevails … missed deadlines surprise everyone.

- ❑ **Someone else's fault**: The customer is blamed for all problems, because "we're just doing what they asked us to do."

- ❑ **Yelling fixes everything**: Senior Management's most frequent response is "Make It So!"

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Project Management Requires a Fundamental Shift in Philosophy

To successfully implement the Project Management Process Category, people must radically change the way they've been taught to think and behave at work.

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Project Management is a Change in Attitudes and Behaviors

Project Management:	**Not Project Management**:
❑ Plan first, then do in accordance with the plan	❑ Act and then wait for "surprise" consequences
❑ Being proactive	❑ Being reactive
❑ Using facts for making decisions	❑ Making decisions "from the gut" … "shoot from the hip"
❑ Observing and measuring work performance	❑ Replacing reality with the desired perception
❑ Introspection and learning	❑ Blaming everyone but yourself

So What Can Be Done?

Take an incremental approach:

- ❑ Identify existing tools & processes

- ❑ Perform a mini-assessment to identify best practices, CMMI gaps, and systemic problems

- ❑ Prepare the people for change

- ❑ Establish incentives for desired attitudes and behavior; establish disincentives for undesirable attitudes and behavior (reward left column on Slide 9)

- ❑ Establish baseline PM practices

- ❑ Provide training on the baseline practices

- ❑ Use PPQA to audit frequently and obtain improvement suggestions

- ❑ Implement incremental changes

Why an Incremental Approach Works Best

Benefits of an incremental approach:

- ❑ Demonstrate basic benefits and value early on

- ❑ Start collecting baseline metrics

- ❑ Give people time to adjust

  - ❑ Allow time for training and absorption

  - ❑ Senior management needs to change too

- ❑ Understand your needs before purchasing tools

- ❑ Some problems are organizational problems and they may take a LONG time to solve

- ❑ You can start to lay the foundations for many Generic Practices right away

Preparing for Change

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Consider the Impact on Project Managers

A sea change for project managers:

- ❑ You will be asking them to do things they've never done before:
    - ❑ Work with costs and other financial concepts
    - ❑ Understanding company infrastructure
    - ❑ Influencing and negotiating rather than just doing
    - ❑ Managing people, not just systems or technology
    - ❑ Preparing to challenge and be challenged

- ❑ Some will leave or asked to be reassigned

- ❑ It's hard to ask for help
    - ❑ Don't assume if they are not following the process, they're being antagonistic. They may not understand how or why.

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Teach PMs What They Need to Know

Establish a Project Management training program:

❑ Not just processes and tools, but also:

  ❑ Measurement and statistical analysis

  ❑ Financial concepts

  ❑ Leadership skills

  ❑ Communication, presentation, and negotiation skills

❑ Consult with Human Resource or Training Departments

❑ Consider the Project Management Institute (PMI) as a resource

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Consider the Impact on Senior Management

Senior Leadership needs to understand they have a critical role in project management:

- ❑ You will be asking them to do things they may have never done before:
    - ❑ Be involved with the projects
    - ❑ Become a "customer" for project and process performance facts and measures
    - ❑ Make decisions and act on facts
    - ❑ Remove roadblocks
    - ❑ Challenge and be challenged

- ❑ Be frank with them about the time it will take and give them tools they can use

- ❑ It's hard for Senior Management to ask for help
    - ❑ Coach in private.

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Prepare Senior Management

Ensure Senior Management:

❑ Understands their role in project management

❑ Understands the need for enforcement and reinforcement

❑ Knows there may be turnover

❑ Understands the incremental approach

❑ Knows what successful project management looks like, and knows that it is not synonymous with successful projects

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Consider the Impact on Other Staff

Ask these questions, and incorporate the answers into the effort to establish project management in the org:

- ❑ Who owns the customer relationship?

- ❑ Who owns the resources?

- ❑ Who owns the financial data?

- ❑ Does the organization or project have measurable performance goals? (Hint: "be better" is insufficient.)

- ❑ Why does the individual care about improvement? What are the incentives?

- ❑ Is project management the right fix but for the wrong problem?

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Establish a Minimum Baseline Standard

Before making improvements, establish a minimum standard for projects to enable learning and quantifying the weaknesses:

- ❑ Management issues a policy for PM

- ❑ Document the minimum standards each project must meet, for example:
    - ❑ Cannot have a single WBS task bigger than xx hours
    - ❑ Must capture and record deviations between plan and actual performance (effort, dollars, schedule, etc)
    - ❑ Must conduct a post-project lessons learned

- ❑ Train the managers on the minimum standard

- ❑ Train the managers on the tools

- ❑ Audit early and often!

- ❑ Report adherence to standard in aggregate

- ❑ Recognize and act on improvement suggestions

Project Planning

Start small in building a project planning capability in the organization, and let it evolve:

- ❑ Nearly every organization has some form of project plan and cost estimate already in place; use that and don't invent something new

- ❑ If you have nothing, start small!
    - ❑ A WBS/schedule with 10-15 tasks
    - ❑ A small set of attributes

- ❑ Create new documents only as a last resort

- ❑ Don't add process until you are sure that is what is needed

- ❑ Let people use the tools they are already familiar with

- ❑ Get senior management to reward planning activities and outputs

- ❑ Measure the baseline cost of project planning

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Common Roadblocks in Project Planning

Some of the common planning issues, and ways of dealing with them are:

- ❑ Basing estimates on attributes of work/work products:
    - ❑ Size attributes are difficult and contentious
    - ❑ Consider attributes by phase (to start)
    - ❑ Use attributes that are organic to the organization, not just what others in the industry use

- ❑ Confusion between risks and issues:
    - ❑ Provide training on basic risk management

- ❑ Concerns that planning effort exceeds the benefits:
    - ❑ Another reason to start small and give reasons why a certain step is being performed
    - ❑ Advertise planning success stories and case studies (theory does not impress practitioners!)

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Common Roadblocks in Project Planning (continued)

- ❑ Concerns regarding access to financial data (salaries, billing rates, overhead):
  - ❑ Get started by using standardized rates or just tracking effort or resource usage

- ❑ Price and cost are not the same thing:
  - ❑ Project Managers provide the estimate for total resources required
  - ❑ Sales can determine the price, but this doesn't change the resources required to do the work or the cost of performing it

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Project Monitoring & Control

As with planning, start small with project monitoring and control, and let it evolve gradually:

- ❑ Nearly every organization has some form of reporting the status of work and projects; start with the native practices

- ❑ If you have nothing, start small! For example:
  - ❑ Just track major milestones in a table
  - ❑ Update costs and schedules once per month
  - ❑ Create an Issue Log / Action Item Log
  - ❑ Collect and use project lessons learned

- ❑ Create new documents only as a last resort and keep them simple

- ❑ Measure the baseline cost of project monitoring and control

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Common Roadblocks in Project Monitoring & Control

Some of the common monitoring and control issues, and ways of dealing with them are:

- Senior Management Availability:
  - Establish a rotating schedule on a convenient day for Senior Management
  - Start by reviewing a subset of projects and set strict time-limit for each project
  - Do NOT hold the meetings (such as project reviews) without Senior Management
  - In project reviews, lead the change by responding to information backed by data or measures

- Concerns regarding distribution of actual cost data:
  - Report in aggregate by project phase rather than on an individual basis

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Common Roadblocks in Project Monitoring & Control (continued)

❑ Hesitancy to raise concerns and issues:

   ❑ Separate the person from the problem

   ❑ Define objective measures to trigger responses

   ❑ When issues are identified, treat them seriously, track them, brainstorm the potential impact and potential resolutions

❑ Time tracking:

   ❑ Don't require too much detail to start, especially if you're going to have to track it manually

❑ What do we tell (or don't tell) the customer?

   ❑ Define the level of detail and frequency of status reporting that is appropriate for the customer

   ❑ Categorize issues and risks as internal and external and report accordingly

Risk Management

❑ Understand the model's requirements for a "comprehensive" strategy

❑ Unless, you feel risk management is an area of exceptional importance for you (for instance, human safety or environmental concerns), wait until you have PP/PMC/SAM implemented.

❑ Best to adapt your categories of risks from experience, not a book … project lesson's learned is a great source for identifying risks to future projects

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Incremental Approach gets Generic Practice implementation started

The following Generic Practices can be started immediately with this incremental approach:

- ❑ GP2.1 (Establish an Organizational Policy)

- ❑ GP2.3 (Provide Resources)

- ❑ GP2.4 (Assign Responsibility)

- ❑ GP2.5 (Train People)

- ❑ GP2.7 (Identify and Involve Relevant Stakeholders)

- ❑ GP2.9 (Objectively Evaluate Adherence)

Use the Project Management Institute (PMI)

PMI is a great resource for project management tools, training, and best practices:

❑ The standards document, A Guide to the Project Management Body of Knowledge (PMBOK Guide), is recognized throughout the world as a standard for managing projects

❑ The PMBOK Guide is approved as an American National Standard by the American National Standards Institute (ANSI).

❑ Project Management Professional and Certified Associate in Project Management certifications.

❑ Local chapters and specific interest groups

❑ See www.pmi.org for more information

PMI – US DoD Synergy

PMI Today August 2004 edition states the Defense Acquisition University has determined that:

❑ Achieving PMP certification meets the competencies of one of the training courses necessary in Level Two acquisition workforce certification in the program management career field.

❑ Individuals with PMP certification have the competencies required for course PMT250, "Program Management Tools"

CMMI and PMBOK Synergy

The <u>DOD Extension to the PMBOK</u> provides project management knowledge and practices for:

- ❏ System Engineering Management

- ❏ Software Acquisition Management (SAM, ISM)

- ❏ Logistics Management

- ❏ Test and Evaluation Management (VAL)

- ❏ Manufacturing Management

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Leveraging the PMI Synergy

The CMMI and the PMBOK can be used together for more effective and efficient process improvement:

❑ Use PMBOK as "how to" guide for implementing the project management practices in the CMMI.

❑ Use the PMBOK's Project Procurement Management section to complement the CMMI's Supplier Agreement Management.

❑ Use PMBOK-based training and certifications to create training plans for project management staff.

❑ Use PMI certified PMPs to define your organization's project management processes.

Leveraging the Synergy (cont)

… more effective and efficient process improvement:

❑ Use the CMMI to "round-out" the PMBOK by integrating the management of other system engineering processes into project management.

❑ Use the CMMI's Generic Practices to establish the infrastructure needed to institutionalize good project management practices.

❑ Use the PMBOK's practices for project initiation and project closure to complement the CMMI's Project Planning and Project Monitoring and Control.

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Contacts and more information

- ❑ Susan Byrnes, PMP
  Natural SPI, Inc
  e-mail: susan@naturalspi.com

- ❑ Natural SPI's web site (www.naturalspi.com)

- ❑ PMI: www.pmi.org

- ❑ DoD Extension to PMBOK:
  www.dau.mil/pubs/gdbks/pmbok.asp

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Real Process Improvement Using the CMMI
Michael West