CMMI® for Managers

SES CMMI® Training Series

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Audio- 1-877-760-2042

Passcode- 147272

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Agenda

- Project Management Success with the CMMI
- Success Through Process
- The Generic Goals and Project Management
- How Process Management Supports Project Management
- The Project Management Processes
- The Support Processes
- Integrated Project Management and the PMBOK

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Course Objectives

Train SES managers and support personnel at both the corporate and project levels to:

- *Understand the role of CMMI® in managing projects.*
- *Understand how institutionalization affects project management.*
- *Learn the application of management and support processes to projects.*
- *Become familiar with some relationships between CMMI® and the PMBOK.*

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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

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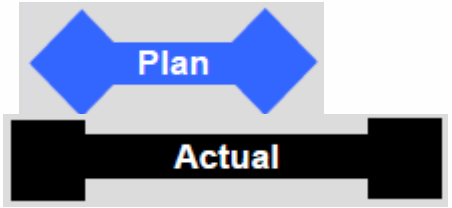
Project Management as Practiced by "PMs" (who aren't really PMs!)



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

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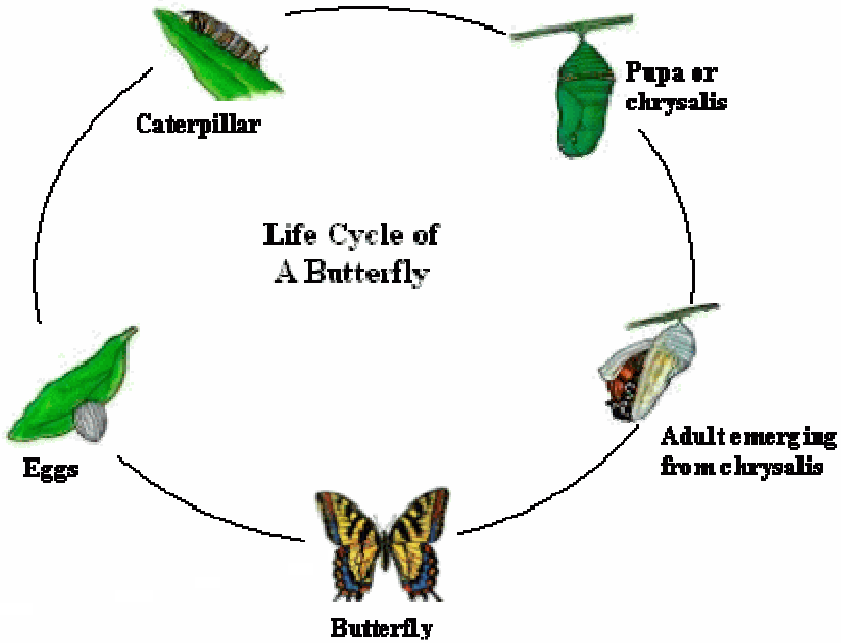
What can be Done?

- Take an incremental approach!!!

- **Preparing for Change!!!**



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Why Choose the CMMI Model?

- Proven – It provides Industry best practices from a wide body of successful users – may be adopted or modified as needed for our specific project needs
- Flexible – Processes are defined according to business goals, product characteristics
- Modular – divided into process areas and levels
- Scalable – it is possible to use the model for project with different sizes
- Comprehensive - integrates management and engineering issues
- Road Map – it possible to use the staged model or the continuous model

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Success Through Process

Projects are more likely to succeed with project management processes in place

- Much more common now for projects to integrate components from multiple sources, develop final product or service
- Processes weave together the people, procedures, and tools
- Best practice processes perform the weaving more effectively and efficiently

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The Criticality of Tailoring

- *Tailoring* is a key activity to demonstrate standardization of process within SES projects (both internal and external)
- Tailoring has as its starting point the SES set of standard processes
- Project processes derive from the OSSP (Organizational Standard Software Processes) instead of ad-hoc, client-based, or other sources
- Tailoring done properly should not interfere with meeting client process requirements and artifact production requirements

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Success Through Process

Capability Maturity Model Integration (CMMI) Version 1.2 Process Areas (PA)

LEVEL 2	Requirements Management	REQM
	Project Planning	PP
	Project Monitoring and Control	PMC
	Supplier Agreement Management	SAM
	Measurement and Analysis	MA
	Process and Product Quality Assurance	PPQA
	Configuration Management	CM
LEVEL 3	Requirements Development	RD
	Technical Solution	TS
	Product Integration	PI
	Verification	VER
	Validation	VAL
	Organizational Process Focus	OPF
	Organizational Process Definition +IPPD	OPD
	Organizational Training	OT
	Integrated Project Management +IPPD	IPM
	Risk Management	RSKM
	Decision Analysis and Resolution	DAR

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The Generic Goals and Project Management

- ‘Generic’ means the goal applies to more than one process area
- Generic goals describe how an organization institutionalizes each process area
- Therefore, our projects must achieve *each* of the generic goals for *every* process area

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The Generic Goals and Project Management

- GG2: Institutionalize a managed process
  - GP 2.1: Establish and maintain organizational policy
  - GP 2.2: Establish and maintain the plan to perform the process
  - GP 2.3: Provide adequate resources
  - GP 2.4: Assign responsibility
  - GP 2.5: Train people
  - GP 2.6: Manage configurations
  - GP 2.7: Identify and involve stakeholders
  - GP 2.8: Monitor and control the process
  - GP 2.9: Objectively evaluate adherence
  - GP 2.10: Review status with higher management

Those in blue font relate directly to PM. You could argue that GP 2.5 also falls into this category.

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The Generic Goals and Project Management

- GG3: Institutionalize a defined process
  - GP 3.1: Establish a defined process
  - GP 3.2: Collect improvement information

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The Generic Goals and Project Management

Generic Goal	Typical SES Artifact
GP 2.1: Establish and maintain organizational policy	SES policy
GP 2.2: Establish and maintain the plan to perform	PP w/revisions, schedule
GP 2.3: Provide adequate resources	PP w/revisions, schedule, org chart
GP 2.4: Assign responsibility	PP w/revisions, schedule, org chart
GP 2.5: Train people	Training plan or PP
GP 2.6: Manage configurations	Data Mgmt. Plan or PP, CM plan
GP 2.7: Identify and involve stakeholders	PP signoff, Mgmt reviews, meetings w/relevant stakeholders
GP 2.8: Monitor and control the process	Detailed proj. status report, MDS, milestone / mgmt. meetings
GP 2.9: Objectively evaluate adherence	QA report, QA audit, AI/CAR log
GP 2.10: Review status with higher management	PM & QA reports, milestone & mgmt reviews, demos

PP = project plan
MDS = metric definition spreadsheet
AI/CAR = Action Item/Corrective Action Request

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The Generic Goals and Project Management

Generic Goal	Typical SES Artifact
GP 3.1: Establish a defined process	Std Processes and Tailoring worksheet
GP 3.2: Collect improvement information	Proj. closure report, lessons learned, MDS or other measurements in SES repository

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How Process Management Supports Project Management

- EMO sets policy, directs process management activities
- PMG maintains process management processes
- Process management process areas (OPF, OPD, OT) maintained by PMG
- Process management processes help projects by:
  - Training project staff in the CMMI®
  - Identifying strengths & weaknesses in process implementation (assessment, audit)
  - Maintaining and improving the set of standard SES processes
  - Assist projects in deploying SES processes including tailoring
  - Assist projects in updating and maintaining SES processes throughout the project life cycle

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The Project Management Processes

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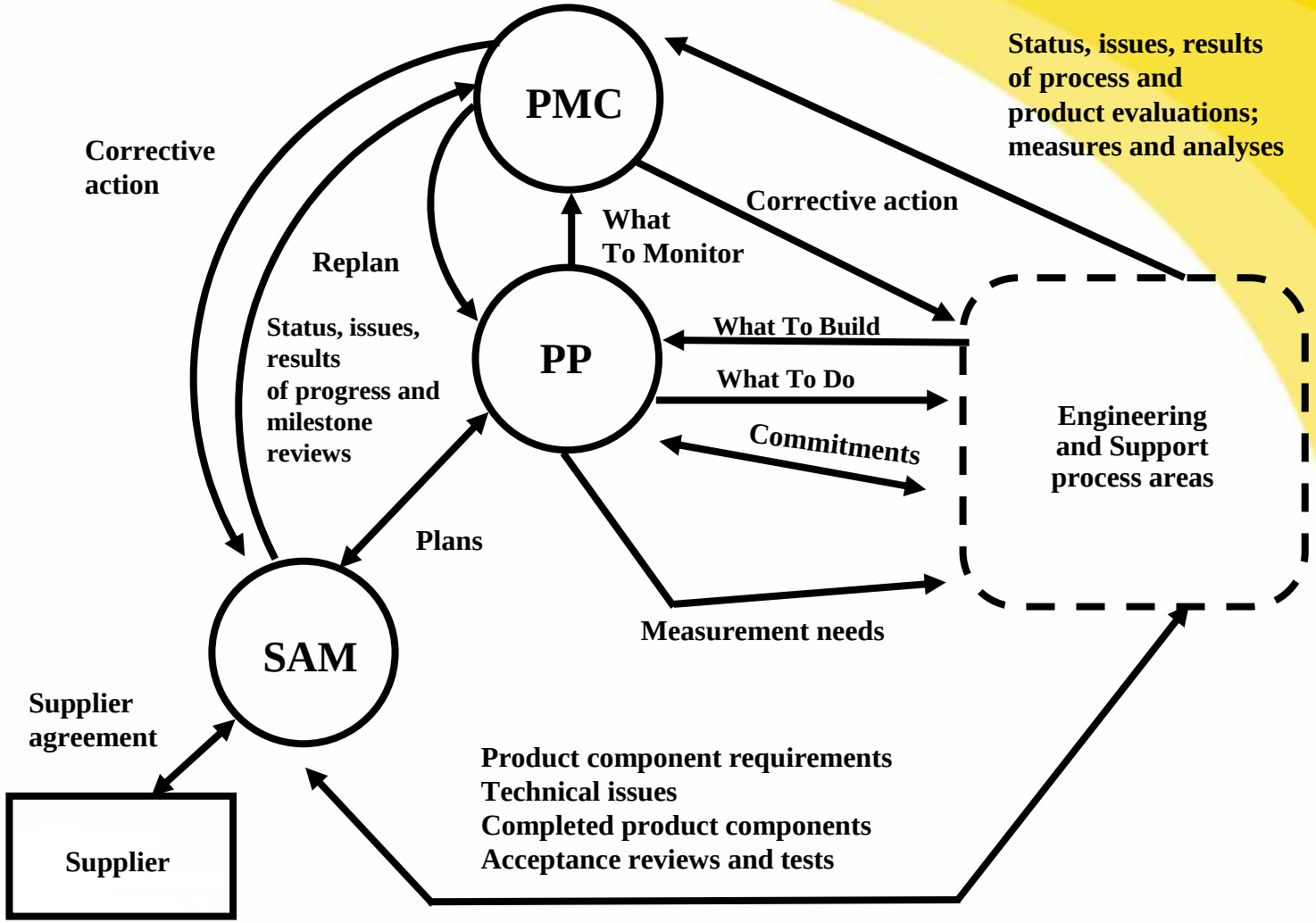
Basic Project Management PAs

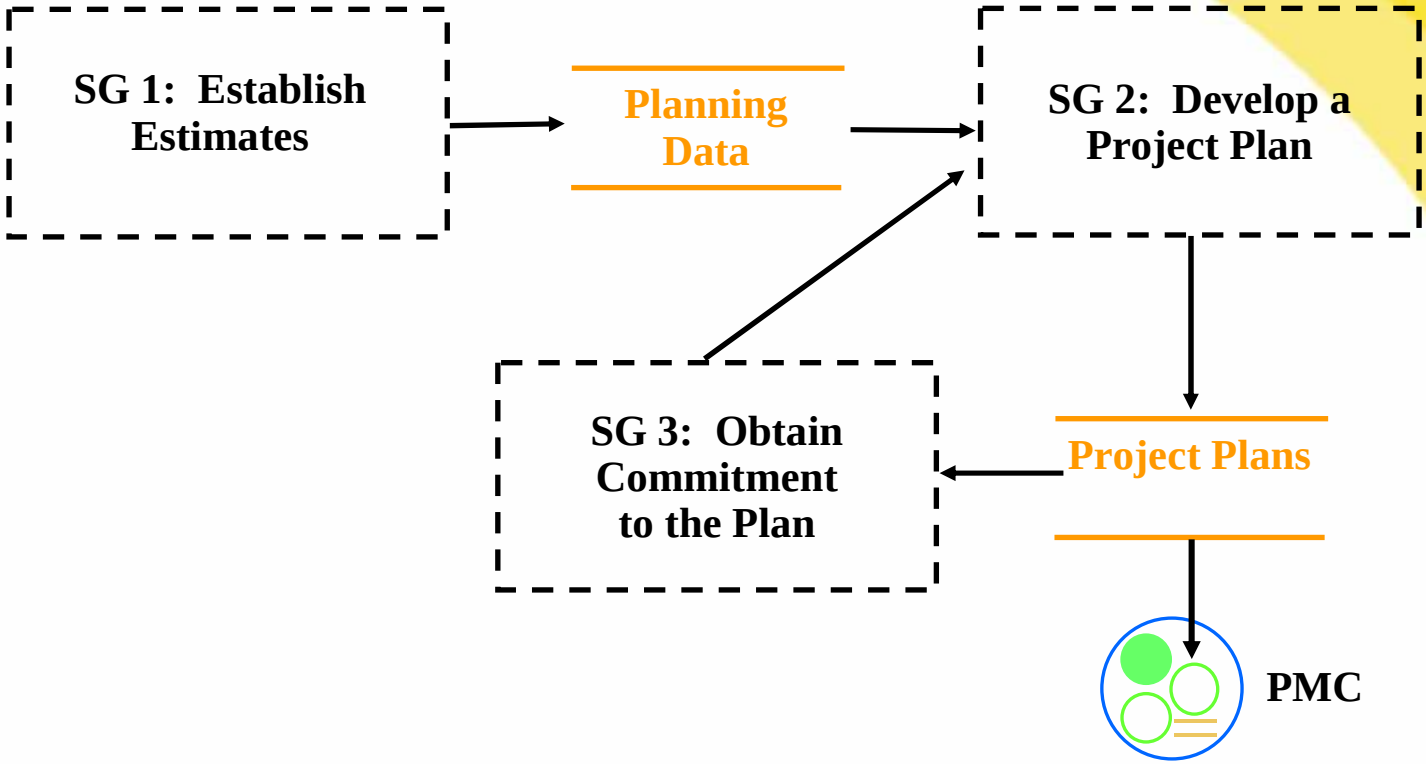


Project Planning

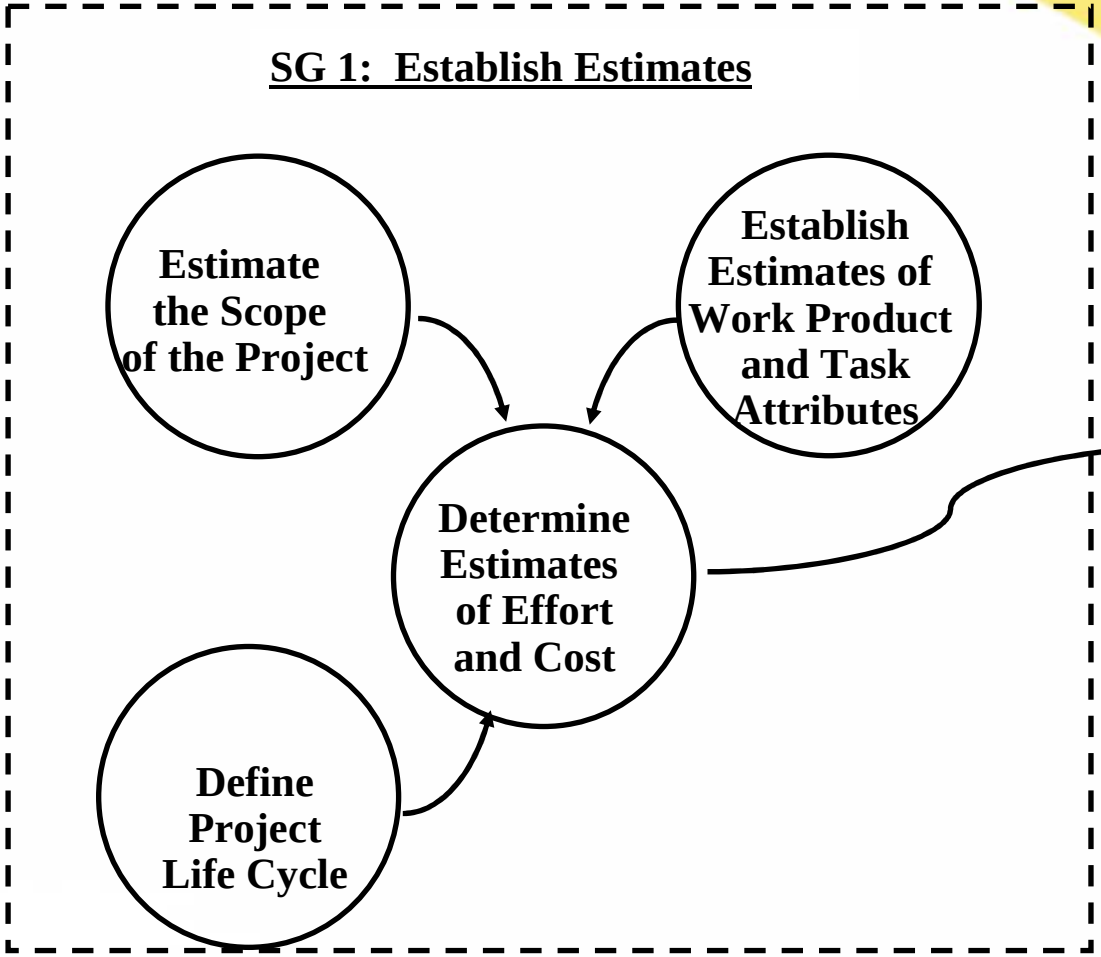
Purpose:

Establish and maintain plans that define project activities.

Project Planning - Context

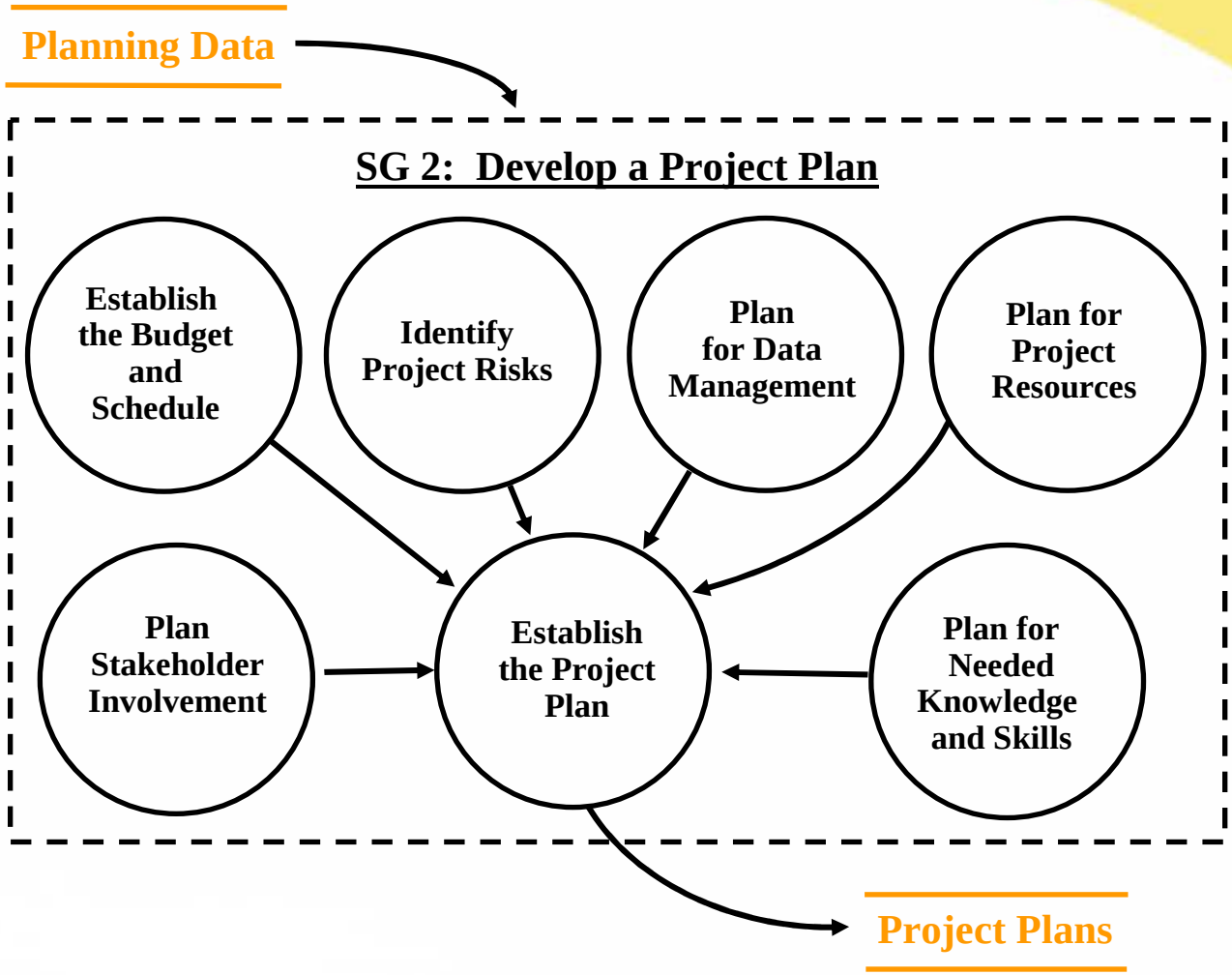


Project Planning - Context



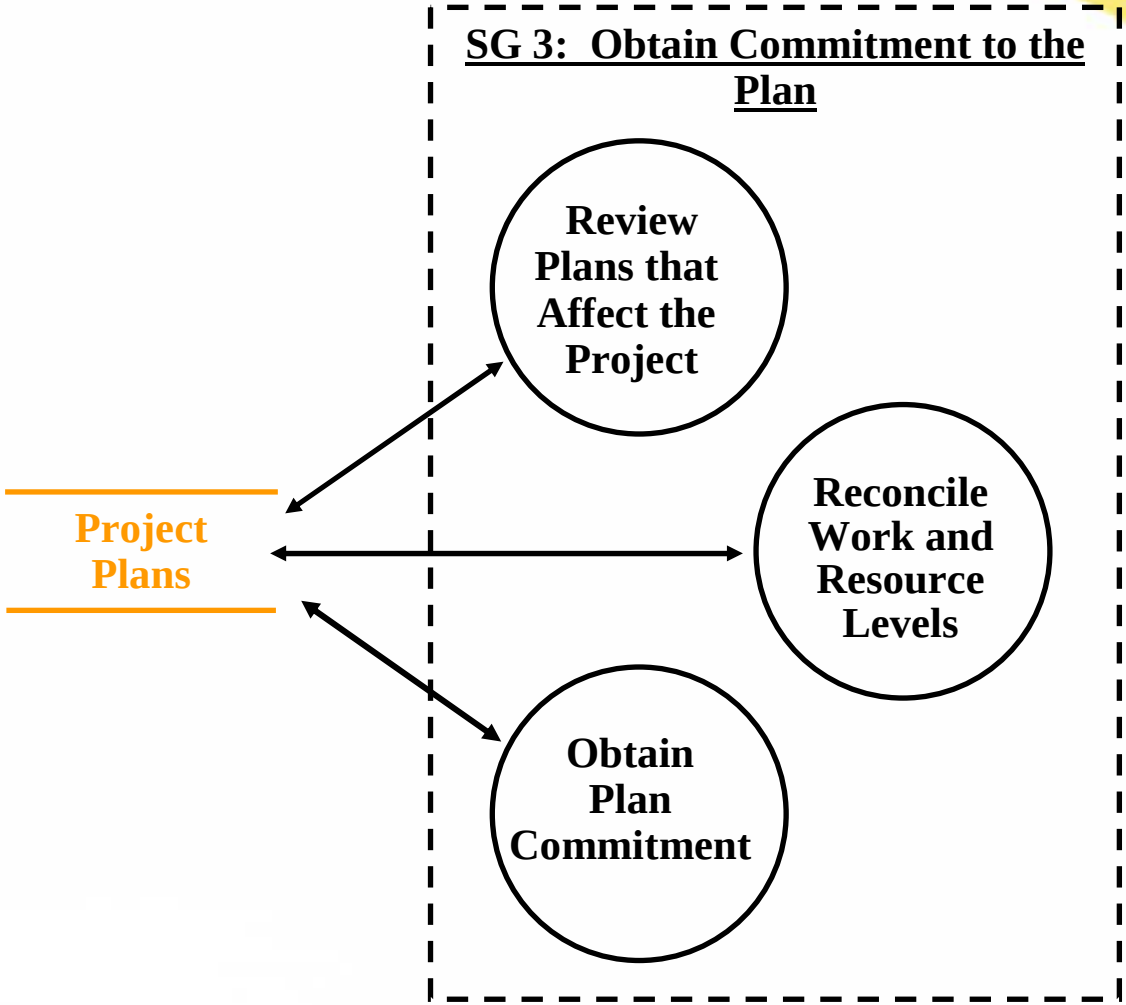
Artifacts: Estimating worksheet, WBS, Gantt chart incl. resource utilization, defined life cycle

Project Planning - Context



Artifacts: Project plan incl: revision history, data mgmt. table, communication/ stakeholder involvement, skills & knowledge needed. Gantt chart incl: resource utilization. Risk Register.

Project Planning - Context



Artifacts: PP signoff, revision history. Minutes, briefings from kickoff, peer reviews, milestone, or other meetings.

Project Monitoring and Control

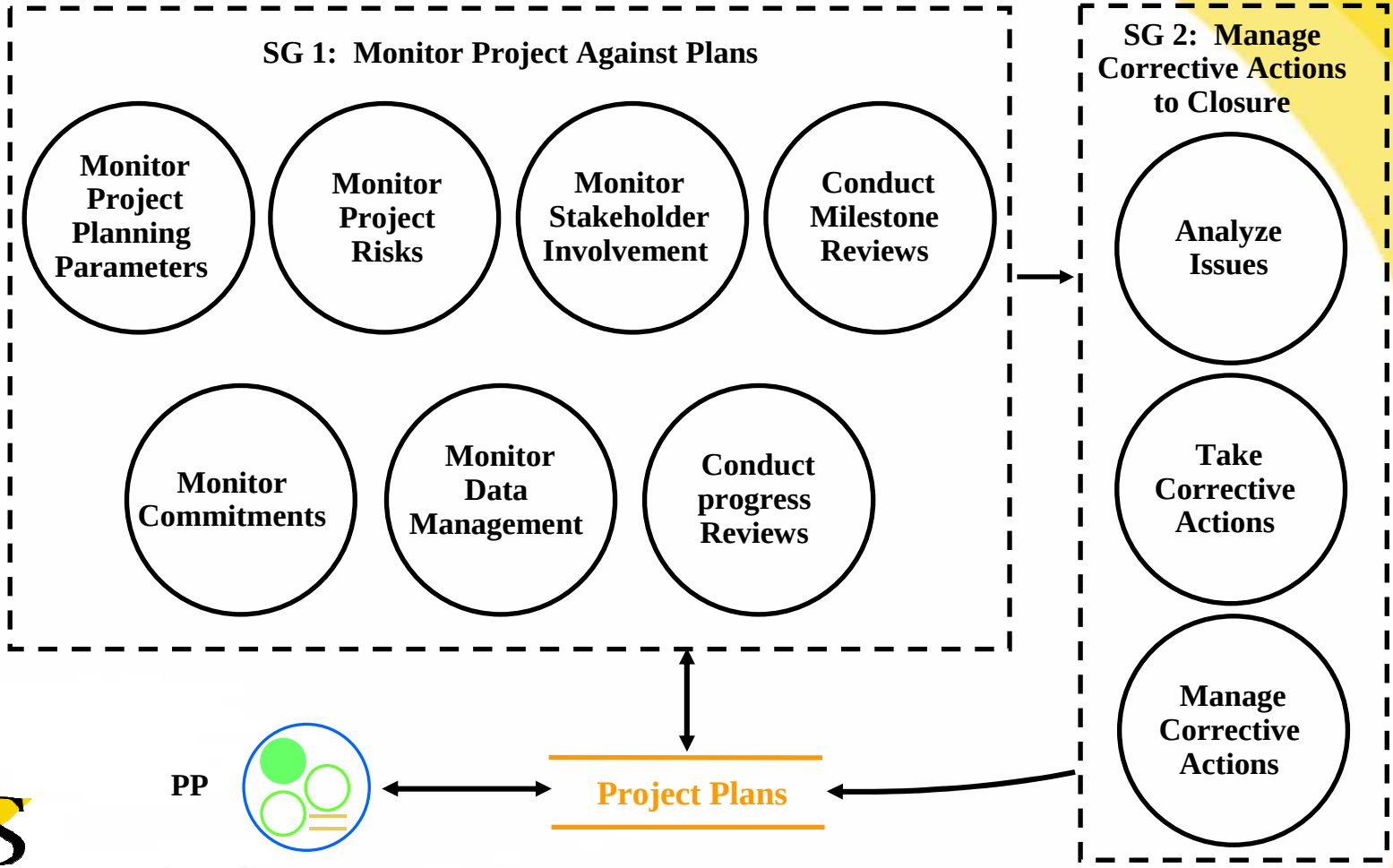
Purpose:

Provide understanding into the project's progress so that appropriate corrective actions can be taken when the project's performance deviates significantly from the plan.

Project Monitoring and Control - Context

Artifacts: QA audit reports, PM/QA/CM status reports, Risk report & register, Mgmt. Reviews.

Artifacts: Mgmt. Reviews / minutes / attendance, PM status report, action item and issues logs, revised PP w/signoff.



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Supplier Agreement Management

Purpose: ***Manage the acquisition of products from suppliers.***

Goal	Activities	Artifacts
Establish supplier agreements	Determine type of acquisition. Select suppliers. Establish agreements.	Procurement plan, supplier contract, RFI/RFP, SOW
Satisfy supplier agreements	Execute supplier agreement. Monitor selected supplier processes and work products. Accept and transition supplier products.	Acceptance plan, form, and register; PM & QA status reports; QA audit, issue log; V&V report.

RFI = Request For Information
RFP = Request For Proposal
SOW = Statement Of Work
V&V = Verification and Validation

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Integrated Project Management

Purpose: ***Establish and manage the project and the involvement of the relevant stakeholders according to an integrated and defined process that is tailored from the organization's set of standard processes.***

Goal	Activities	Artifacts
Use the project's defined process	Establish defined process. Use SES assets in project planning. Establish work environment and integrated plans. Manage project per integrated plan. Contribute to SES process assets.	Integrated PM plan. Estimating worksheet. Work environment standards. PP incl. work environment per standards. PM & QA reports. PIR form. Contributed work products in PAL.
Coordinate & collaborate with stakeholders	Manage stakeholder involvement. Manage (identify, track) dependencies. Resolve coordination issues.	Project Mgmt. Review PMO report. Issue log. PM status report.

PP = Project Plan
PIR = Process Improvement Recommendation
PAL = Process Asset Library

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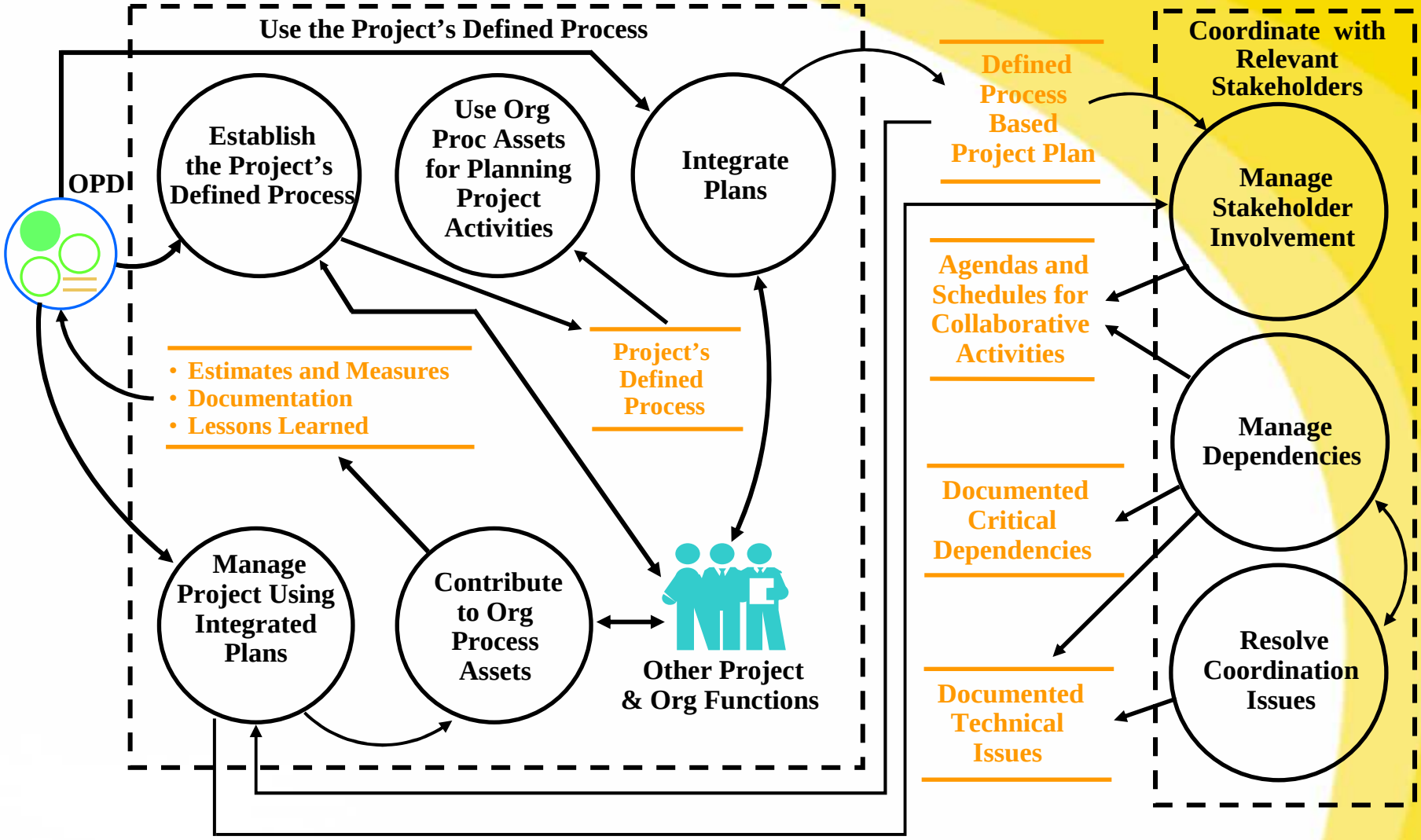
Integrated Project Management - Context



Risk Management

Purpose: ***Identify potential problems before they occur so that risk-handling activities can be planned and invoked as needed across the life of the product or project to mitigate adverse impacts on achieving objectives.***

Goal	Activities	Artifacts
Prepare for risk management	Determine sources, categories of risk. Define risk parameters. Establish risk strategy.	Risk Taxonomy worksheet. Risk Plan (in PP or separate).
Identify & analyze risks	Identify, evaluate, categorize, and prioritize risks.	Risk Taxonomy worksheet. Risk Plan (in PP or separate). Risk Register.
Mitigate risks	Develop and implement risk mitigation plans.	Risk Plan (in PP or separate). Risk Register. Project schedule with mitigation tasks.

PP = project plan

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→The Support Processes

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The Support Processes

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Measurement and Analysis

Purpose: ***Develop and sustain a measurement capability that is used to support management information needs.***

Goal	Activities	Artifacts
Align M&A activities	Establish objectives. Specify measures. Specify data collection and storage procedures. Specify analysis procedures.	SES Metric Plan; possibly in PP also. MDS.
Provide measurement results	Collect, analyze, and store data. Store results of data analysis. Communicate analysis results.	PM & QA reports (can attach MDS) stored in Doc. Locator.

PP = Project Plan
M&A = Measurement and Analysis
MDS = Metric Definition Spreadsheet

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Process and Product Quality Assurance

Purpose: ***Provide staff and management with objective insight into processes and associated work products.***

Goal	Activities	Artifacts
Objectively evaluate processes, work products	Evaluate work product, services, and processes.	QA audit checklists (suite)
Provide objective insight	Communicate non-compliance. Ensure non-compliance issues are resolved. Establish QA records.	QA audit checklists (suite). CAR log / defect log. Audit schedule.

QA = Quality Assurance.
CAR = Corrective Action Request

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Configuration Management

Purpose: ***Establish and maintain the integrity of work products using configuration identification, configuration control, configuration status accounting, and configuration audits.***

Goal	Activities	Artifacts
Establish baselines.	Identify configuration items. Establish a CM system. Release baselines.	CM Plan (or CM section in PP). Project's populated Doc. Locator directory. Diagram of environments (dev., test, prod., etc.).
Track and control changes.	Track change requests. Control configuration items.	Key project documents' PM and client signoff and change history; document versions.
Establish integrity	Establish CM records. Perform configuration audits.	Key project documents' PM and client signoff and change history; document versions. CM baseline audit report. Functional and physical audit reports.

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PP = Project Plan
CM = Configuration Management

Decision Analysis and Resolution

Purpose: ***Analyze possible decisions using a formal evaluation process that evaluates identified alternatives against established criteria.***

Goal	Activities	Artifacts
Evaluate alternatives	Establish guidelines and evaluation criteria. Identify alternative solutions. Select evaluation methods. Evaluate alternatives. Select solutions.	DAR evaluation checklist / report.

DAR = Decision Analysis and Resolution

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Other Processes

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Requirements Management

- Plays critical role in project management, though it comes from the Engineering process group.
- CMMI V1.3 will add REQM to the Project Management process group.

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Requirements Management

Purpose: ***Manage the requirements of the project's products and product components and to identify inconsistencies between those requirements and the project's plans and work products.***

Goal	Activities	Artifacts
Manage requirements	Understand reqmts. Obtain commitment to reqmts. Manage reqmts changes. Maintain traceability. Identify inconsistencies between work products and reqmts.	Product reqmt specification signoff. Demo / walkthrough minutes, attendance: kickoff, reqmts peer review form / results. Reqmt change form. Traceability matrix w/revision history.

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The CMMI vs. PMBOK

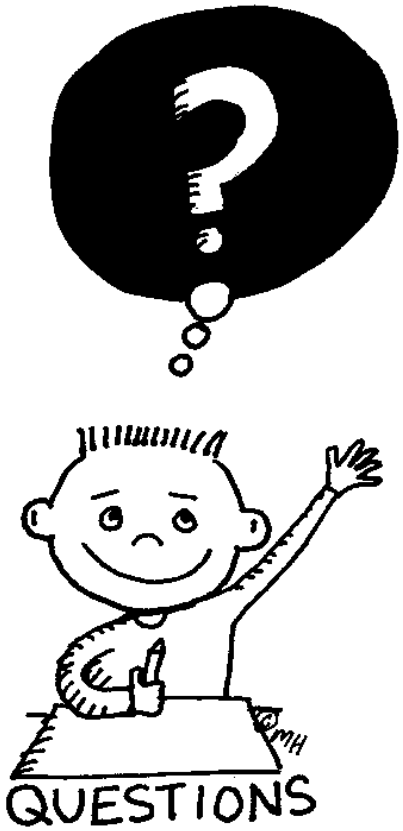
CMMI

- Integrates project management and engineering practices
- Deals with organizational and single project practices
- Divided into maturity levels and process areas
- Fits system development projects

PMBOK

- Focus on project management
- Deals mainly on a single project practices
- Divided into knowledge areas and management areas
- Includes human resources management processes
- Fits different types of projects

Q & A?



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Further Info

CMMI Homepage

https://teammember.sessolutions.com/sescmmi.aspx

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Thank You !

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