THE PROCESS GROUP

A Real-Life Example of Appraising and Interpreting CMMI® Services Maturity Level 2

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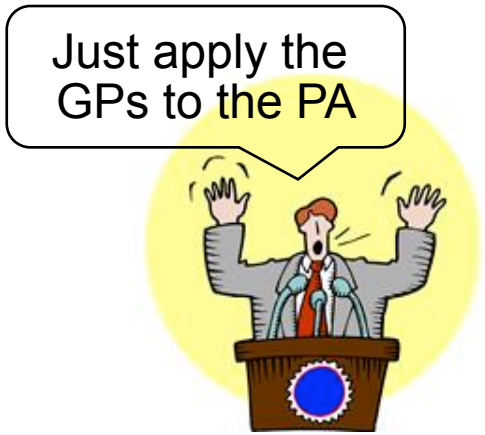
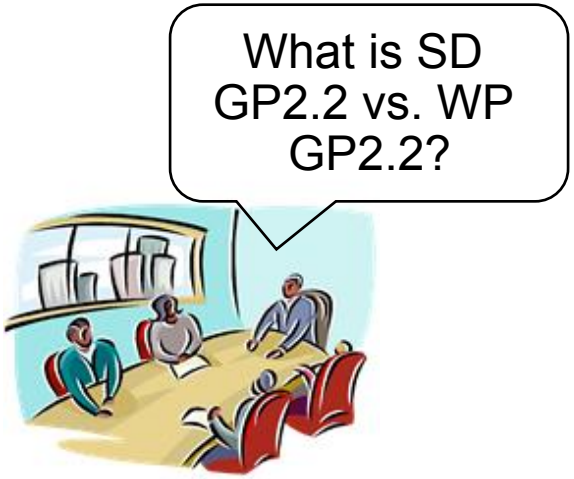
Agenda

- Introduction
- Applying Requirements Management (REQM) and traceability
- Applying Work Planning (WP) and Work Monitoring Control (WMC) to the operation of a services group
- The relation between Service Delivery and WP / WMC
- Size (attribute estimation)
- Which suppliers to apply Supplier Agreement Management (SAM) to?
- What is being audited for Process and Product Quality Assurance (PPQA)?
- How to apply Configuration Management (CM) to service artifacts
- Overlap between core and service PAs at Level 2
- Appraisal issues
- Reaction of a new group to the SVC model
- Suggestions to make life easier
- Summary

Introduction -1



Presenting



Appraising

Presenting:

- Easy to gloss over all the sticky issues - “Look how good the service PAs are.”

Appraising:

- Sort out issues such as: core PA interpretation, overlap.

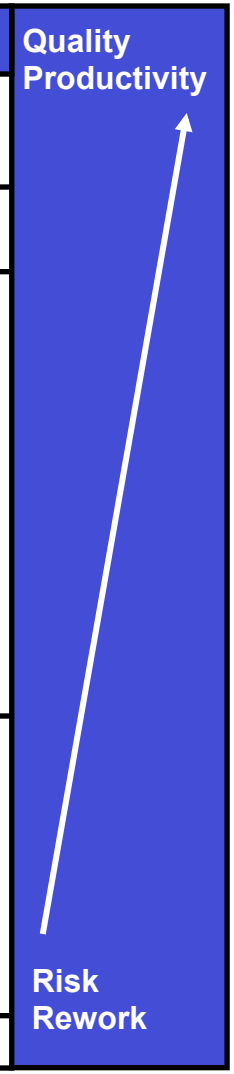
Introduction -2

- **Appraisal team:**
  - Three people experienced with DEV (5-10 years) + LA (22 years with DEV)
  - Used CMMI 1.2. (This presentation uses 1.3 text for clarity.)
- **Larger group:**
  - 200 people that design and build large airport baggage / parcel systems:
    - » Motors, steel, conveyors, electronics, software, installation, testing.
- **Groups appraised:**
  - Bids/Proposals (7 people) and Financial services (11 people).

Services Model v1.3 - Staged

Level	Focus	Process Areas
5 Optimizing	*Continuous Process Improvement*	Organizational Performance Management (OPM) Causal Analysis and Resolution (CAR)
4 Quantitatively Managed	*Quantitative Management*	Organizational Process Performance (OPP) Quantitative Work Management (QWM)
3 Defined	*Process Standardization*	Capacity and Availability Management (CAM) (svc) Incident Resolution and Prevention (IRP) (svc) Service System Transition (SST) (svc) Service Continuity (SCON) (svc) Service System Development (SSD) (svc, optional) Strategic Service Management (STSM) (svc) Organizational Process Focus (OPF) Organizational Process Definition (OPD) Organizational Training (OT) Integrated Work Management (IPM) Risk Management (RSKM) Decision Analysis and Resolution (DAR)
2 Managed	*Basic Project Management*	Service Delivery (SD) (svc) Requirements Management (REQM) Work Planning (WP) Work Monitoring and Control (WMC) Supplier Agreement Management (SAM) Measurement and Analysis (MA) Process and Product Quality Assurance (PPQA) Configuration Management (CM)
1 Initial		

Core PAs
SVC PAs



Applying REQM and Traceability

The purpose of Requirements Management (REQM) is to manage requirements of products and product components and to ensure alignment between those requirements and the work plans and work products.

- **REQM Takes A LOT of explaining to a non-familiar services group:**
  - The services groups were bidding/tracking product requirements.
    - » Caused total confusion when they were left by themselves to read CMMI.
  - Requirements defined as group roles & responsibilities.
  - Initially we had to explain why REQM and SD are separate.
    - » Then we mapped REQM and SD together - provide one front to the appraisal team and organization.
  - Too much GP!: Policy, plan, training, monitoring and auditing of roles & responsibilities definition activities?
    - » REQM might only take 1 day per year and 1 update every 6 months.
    - » The GPs need to be scaled down DRAMATICALLY to be useful OR mapped to SD GPs. We merged REQM and SD GPs.

Explaining REQM in the Appraisal

- **The appraisal team re-wrote the PA purpose for the final findings presentation:**
  - The purpose of Requirements Management (REQM) is to manage requirements of products and product components and to ensure alignment between those requirements and the work plans and work products.
  - The purpose of Requirements Management (REQM) is to, a) define the services of the group, b) trace defined services to team activities, c) verify that resources, service definition and actual work done are aligned. [appraisal team definition]

Bidirectional Traceability (SP 1.4)

SP 1.4 Maintain bidirectional traceability among requirements and work products.

"In a service environment, you should be able to trace stakeholder requirements to the elements of the delivered service and supporting service system that were developed from those requirements ….." [CMMI 1.2 & 1.3]

Example 1

SOX Requirement	Implementation	Test
SOX Annex - section 1	Finance role 1, report 1	SOX test 1
SOX Annex - section 2	Finance role 2, report 2	SOX test 2
SOX Annex - section 3	Finance role 3, report 3	SOX test 3

Example 2

Bid Role (defined in SLA)	Authority Level	Tasks for Role
Role 1	Approve up to $X	Obtain estimates, define bid, check bid
Role 2	Approve up to $Y	Tasks - role 2
Role 3	Approve up to $Z	Tasks - role 3

Applying WP and WMC

- **The group performs annual resource planning.**
- **"The plan" = Annual resource plan and service-event plan.**
- **Risks are assessed monthly:**
  - E.g., Do we have resources to cover each bid / financial report?
- **Schedules consist of bid and financial report deadlines.**
- **Stakeholders are defined on approval and signature sheets.**
- **Too much GP!: policy, plan, training, monitoring and auditing of annual and service-event planning?**
  - Most planning events were a few hours in length.
  - We merged WP and WMC GPs.
  - Audits = signature approvals with checklists.

Relation Between SD and WP / WMC

- **In SD, planning (GP2.2) is used to plan the readiness and operation of a services group:**
  - » SD GP2.2 - Establish and maintain the plan for performing the process.
  - » SD GP2.3 - Provide adequate resources for performing the process…..
  - » SD GP2.4 - Assign responsibility and authority for performing the process……
  - » SD GP2.8 - Monitor and control the process against the plan for performing the process and take appropriate corrective action.
- **So what was WP / WMC used for?**
  - – Operations planning, of which service delivery is one significant aspect.
  - – Annual resource planning and monthly resource tracking.
  - – Special projects (non-trivial “other” work).

Size (Attribute Estimation)

- **The group reads the practice:**
  - WP SP 1.3 Establish and maintain estimates of work product and task attributes.
  - And assumes that it is #Feet of steel, #motors……etc.
- **The bid group estimates the cost of a project:**
  - #Feet of steel, #motors, #control panels, installation labor.

- **Luckily:**
  - Finance already had:
    - » Project categorization (the size/complexity of the project being financially tracked).
  - Bids already had:
    - » Bid volume (#bid requests likely to arrive per month).

Which Suppliers to Apply SAM to?

"The scope of this process area addresses the acquisition of products, services, and product and service components that can be delivered to the service's customer or included in a product or service system. This process area's practices can also be used for other purposes that benefit the service (e.g., purchasing consumables)." [CMMI 1.3]

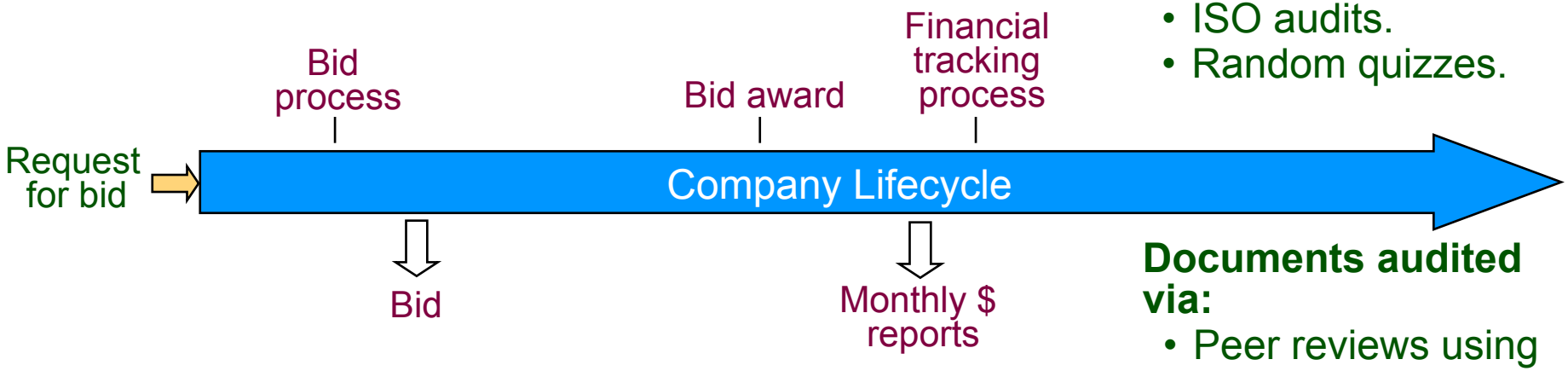
- **Both services teams had no suppliers:**
  - An example would have been accounting experts, proposal writers.
- **The product team had hundreds of suppliers; this was appraised under SAM in the DEV model.**

What is Being Audited for PPQA?

- **Processes:**
  - Lifecycle and Service Delivery processes.
  - Process Area processes.
- **Work products:**
  - Service deliverables + critical internal documents.

Processes audited via:

- Extensive Management Approvals.
- SOX audits.
- Corporate finance audits.
- ISO audits.
- Random quizzes.

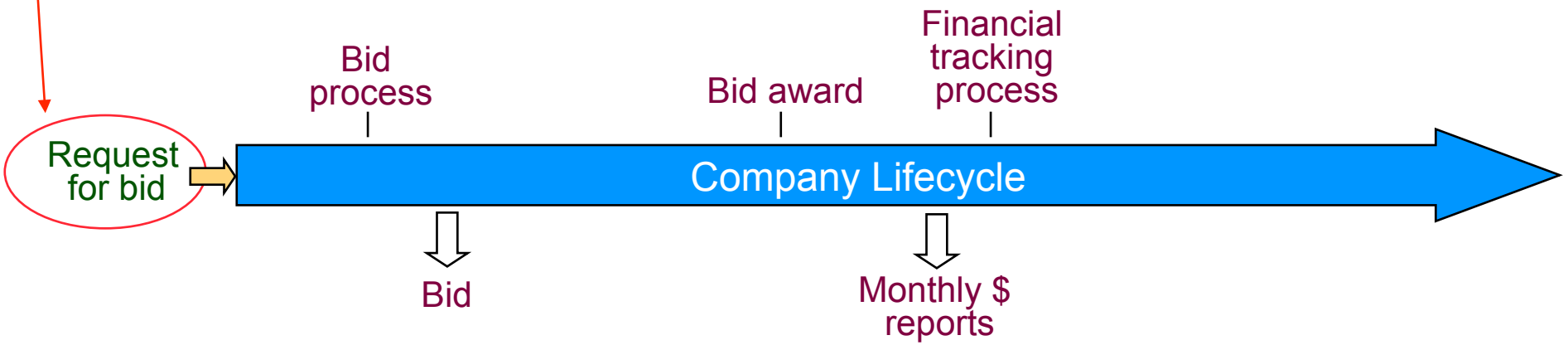


Documents audited via:

- Peer reviews using checklists.
- Signature approvals of document content.

How to Apply CM to Service Artifacts

- **Identify documents that service groups care about, e.g.,:**
  - Internal: Annual plan, checklists, service agreement, audit results.
  - Deliverable: Requests, proposals, estimate sheets, contracts.
- **Define directory structure for all documents, and plan for archival.**
  - Merge Data Management plan in with CM.
- **GPs - keep them simple!**
  - Someone assigned to set up the folders and access.
  - Task defined to "establish CM" that can be planned/tracked.
  - Team meetings for training, random audits for objective evaluation.



Overlap Between Core and Service PAs

- **Lots of overlap - a MUST fix before appraising, otherwise:**
  - You will be asking the same question 3-4 times.
  - The appraisal team will wear out.
  - The interviewees will think you are nuts and unsure about the model.

Practice #	REQM Practice Definition	Rewrite (Italics = exact copy of CMMI practice)
1.1	Develop an understanding with the requirements providers on the meaning of the requirements.	See SD sp1.2
1.2	Obtain commitment to the requirements from participants.	See SD sp1.2
1.3	Manage changes to the requirements as they evolve.	See SD sp1.2
1.4	Maintain bidirectional traceability among requirements and work products.	Trace service requirements to downstream group activities and back (e.g., map service descriptions to team activities and deliverables; do we implement our service definition, do we exceed it, do we have gaps?)
1.5	Ensure that plans and work products remain aligned with requirements.	Align service definition, schedule/budget, team activities. Examples: * Does the services list state to do A, but in reality, the team is doing B. * Analyze measurement, resource and service request data.

Merging Some REQM Practices with SD

Practice #	SD Practice Definition	Rewrite (with additions from REQM SPs and GPs. Italics = exact copy of CMMI practice)
1.1	Analyze existing service agreements and service data to prepare for expected new agreements.	Analyze existing service agreements and service data. Use data as a basis for new agreements. What can we achieve based on the past - lessons; overlooked tasks?) (e.g., In the past, what has been the sales volume, #bids that can be processed, timeliness.)
1.2	Establish and maintain the service agreement.	Define the services of the group and review with staff. [REQM sp 1.1]. Obtain commitment to the services definition from the staff. [REQM sp 1.2] Establish and maintain the service agreements with customers. Manage changes to services (evaluate change).

Overlap (Continued)

REQM (GPs)

GP 2.1	Establish and maintain an organizational policy for planning and performing the process.	See SD GP 2.1
GP 2.2	Establish and maintain the plan for performing the process.	See SD GP 2.2
GP 2.3	Provide adequate resources for performing the process, developing the work products, and providing the services of the process.	See SD GP 2.3
GP 2.4	Assign responsibility and authority for performing the process, developing the work products, and providing the services of the process.	See SD GP 2.4

Practice #	WP Practice Definition	Rewrite (with additions from WMC GPs. Italics = exact copy of CMMI practice)
1.1	Establish and maintain the service strategy.	Objectives: See MA sp1.1. Approach: See SD sp 2.1. Risks: See WP sp 2.2.

Appraisal Issues

- **Asking CMMI questions to service professionals unfamiliar with CMMI:**
  - Plan on rewriting (some of) the CORE PA practices, so that the interpretation is consistent and uses easier words.

Practice #	CM Practice Definition	Rewrite (Italics = exact copy of CMMI practice)
1.1	Identify the configuration items, components, and related work products to be placed under configuration management.	Define a list of items (files, contracts, bids, deliverables, documents) for the group that will be placed under control (e.g., version, access, backup).
1.2	Establish and maintain a configuration management and change management system for controlling work products.	Establish and maintain a system (manual or automated) to store, manage and protect files on the list above.
1.3	Create or release baselines for internal use and for delivery to the customer.	Define naming conventions for files and documents, as they are created and released.

- **Some service-specific practices need examples too:**
  - e.g., “Maintain the service system” means?

Reaction of New Group to the SVC Model

Target audience reaction:

- "How does this relate to our function?"
  - » "What are work product attributes," "What risks?," What are configuration items?" "What is a lifecycle?"
  - » Lead appraiser had to advise "don't read the model, it will just confuse you more." [specifically the core PAs]

Appraisal team reaction :

- Initially, total confusion:
  - » Reading the model, and memorizing what each practice means was wearing.
  - » "Model needs redoing," - wording and overlap of practices.
  - » The findings of the class B appraisal acted as the new model definition for the team, along with the lead appraisers model rewrite.

The core PAs are the challenge

Suggestions to Make Life Easier

- **Run a (very) informal appraisal first, so that:**
  - Interviewees have some idea of what your model interpretation is.
  - You can obtain experience asking interview questions and understanding the responses.
- **Clarify terms (model glossary might / might not help*):**
  - "Requirement," "stakeholders in planning," "risk" vs. "issue," "traceability," "configuration item" "monitor the monitoring process."
- **Train your team in the interpretation of the model before you appraise:**
  - The SVC Supplement class doesn't cover the core PAs.
  - The Intro to CMMI SVC class doesn't cover overlap between PAs and the GPs in detail.

*Requirement: (1) A condition or capability needed by an end user to solve a problem or achieve an objective. (2) A condition or capability that must be met or possessed by a product, service, product component, or service component to satisfy a supplier agreement, standard, specification, or other formally imposed documents. (3) A documented representation of a condition or capability as in (1) or (2).

Summary

- **The core Maturity 2 Level PAs CAN be used in a services organization. They do work.**
  - An organization at ML2 is a more organized and efficient:
    - » E.g., #Mistakes, Response time, #Hours expended.
- **The core PA practices are written for development, not for services.**
  - Intro & Supplement classes focus on the benefit of the service PAs, not the difficulty interpreting the core PAs.
  - Plan on a rewrite, otherwise:
    - » a) You will have to explain practices every time.
    - » b) The target audience will probably forget the meaning and get totally off track.
- **Define what services or work the PAs are being applied to.**

Questions?

Acronyms

- SOX - Sarbanes Oxley
- SLA - Service Level Agreement
- WP - Work Planning
- WMP - Work Monitoring and Control