Don’t Write the Wrong Processes!

Focusing On The Long Term Objective To Reduce Rework

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Perspective—What are you doing?

Cutting stone

Shaping a corner stone
Perspective—What are you doing?

Building a Cathedral
Level Setting

Clarifications to facilitate common understanding
What is a process?

- Activities that can be recognized as implementations of practices in a model (CMMI glossary)
- A complete, end-to-end set of activities that together create value for a customer (Hammer)
- A series of actions or operations conducing to an end (WWWebster)
- A sequence of steps performed for a given purpose (IEEE)
- The logical organization of people, materials, energy, equipment, and procedures into work activities designed to produce a specified end result (Pall, Gabriel A. Quality Process Management. Englewood Cliffs, N.J.: Prentice-Hall, 1987.)
Did that help?
What do we need?

• Our definition has to help us address two issues:
  ✓ How does the overall system partition into pieces?
  ✓ What attributes should each piece possess?
Lots Of Things Are Called Process

- **Process System**: The complete set of process assets needed to equip and run the organization

- **High-level Process**: An abstraction of a functional need, not sufficiently decomposed to fully define the work (the software development process)

- **Process Grouping**: A logical grouping, usually by discipline (the CM process grouping) with multiple entry and exit points

- **Process Element**: A series of steps to transform inputs into outputs and meet a specified objective; at a sufficient level of detail to accomplish the task
Remember the Objective

• Support and enhance your business using industry best practices
  - Least expensive process that will still do the job (Crosby)

• Not
  - “Make me a cookie cutter copy of every other company out there”
“CMMI models are not processes or process descriptions. The actual processes used in an organization depend on many factors, including application domain(s) and organization structure and size. In particular, the process areas of a CMMI model typically do not map one to one with the processes used in your organization.”

“Organizations must use professional judgment to interpret CMMI practices. Although process areas depict behavior that should be exhibited in any organization, practices must be interpreted using an in-depth knowledge of the CMMI model being used, the organization, the business environment, and the specific circumstances involved.”

“To interpret practices, it is important to consider the overall context in which they are used and determine how well the practices satisfy the goals of a process area within that context.”
Designing the Process System

How you do business

Holistic perspective on business

Modularity, loose coupling, strong cohesion
You Need an Engineered Process System

• Why
  ▪ Many user groups
  ▪ Many interfaces
  ▪ Lots of information flows
  ▪ Integrated with 6σ, ISO-9000, etc

• What
  ▪ Clear integration of the process elements (ordering, interfaces, interdependencies)
  ▪ Satisfies the process needs and objectives of the organization
  ▪ Documented, peer reviewed, revised as necessary
Each Process Element
“The fundamental unit of a process. A process may be defined in terms of subprocesses or process elements. A subprocess can be further decomposed; a process element cannot be further decomposed.”

“Each process element covers a closely related set of activities (for example, estimating element, peer review element). Process elements can be portrayed using templates to be completed, abstractions to be refined, or descriptions to be modified or used. A process element can be an activity or task.”
What does a process look like?

Understand the end state
See lower levels as intermediate steps or incremental releases of the process system
 Shoot for the Goal

• If you understand where you’re going, you can implement a flexible design with hooks and handles to implement future capability.
• For example, rough-in the basement bathroom before you pour the foundation; even though you’re not going to finish the bath until 5 years from now.
• Doing it right now is cheaper in the long run.
Look First at Desired End—a L4 Process

**Definition:** “A quantitatively managed process is ... **controlled** using statistical and other quantitative techniques ... quality and process performance are understood in statistical terms and are managed throughout the life of the process.”

**Focus:** Statistically understood at organizational and project levels

**Documentation:** Performance baselined and modeled; Statistical baselines of key subprocesses

**Plan:** To meet specific quality and performance objectives

**Track:**
- Progress using statistical methods
- Special causes of variation
- Quality measures
- Key subprocesses for statistically stability
Level 4 Process System

- Resembles component based process definition
- Includes a collection of process elements that meet the process architecture
- The performance of each element in terms of product quality and process performance is known
  - Some statistically, some just quantitatively
- Allows organization to set realistic organizational process performance goals
  - which are adapted for project circumstances
- Supports projects’ informed decisions on which process elements to use, based on the process element’s ability to support
  - requirements for quality and performance
  - constraints such as budget and schedule
Definition: “A defined process ... is tailored from the organization's set of standard processes according to the organization’s tailoring guidelines, and contributes work products, measures, and other process-improvement information to the organizational process assets.”

Focus: Organization-based architecture of component pieces (Process elements)

Documentation: Documented to standards with sufficient detail for trained, skilled people to execute consistently; Contain entry, exit criteria, roles, verifications, etc.

Plan: Planned using historical data

Track:
- Organization standard measures
- Progress within thresholds
**Even Less at Level 2**

**Definition**: The process description, with relevant standards and procedures.

**Focus**: Project

**Documentation**: Including
- Performance objectives
- Dependencies among the activities, work products, and services
- Measurement requirements

**Plan**: Planned

**Track**: Progress
Specify, in a complete, precise, and verifiable manner, the requirements, design, behavior, or other characteristics of a process. It also may include procedures for determining whether these provisions have been satisfied.

L2 starter process:

**Activities/Steps**: What is done to accomplish this process.

**Performance and Quality Objectives**:
- ML2: Subjective;
- ML4: Many Quantitative, Some Statistical

**Measures**: What data do we need from this process to track
- ML2: Project Progress;
- ML3: Organizational Requirements;
- ML4: Support Organizational Statistical Objectives.
L3 completion:

**Purpose**: Why is this process here, what value does it add?

**Entry Criteria**: What causes this process to be kicked off? and/or What must I have to begin?

**Exit Criteria**: How do I know when I’m done?

**Participants**: Roles and responsibilities regarding the process.

**Verifications**: Approvals and reviews.

**Interfaces**: Other processes; supporting standards and assets.
Impacts of Understanding the SYSTEM

Interrelationships of Processes
Flow of Data and Measures
Balloon Jumble

• Squeeze one area, it puffs out in others – can you predict?

Do you understand enough of how your processes interact to understand how a change in one area will impact another area?

• Are you ready to do it with measures?
Summary

• The right process reflects your organization: culture, structure, and type of work.

• The right process is part of a system with clear interfaces, well-defined boundaries, and purpose.

• The right process is sufficiently modular that it addresses one purpose.

• The right process is sufficiently modular that a measure of that process means something specific.

• The right process is one that lays the foundation for the future.
Q&A

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