

Don't Write the Wrong Processes!

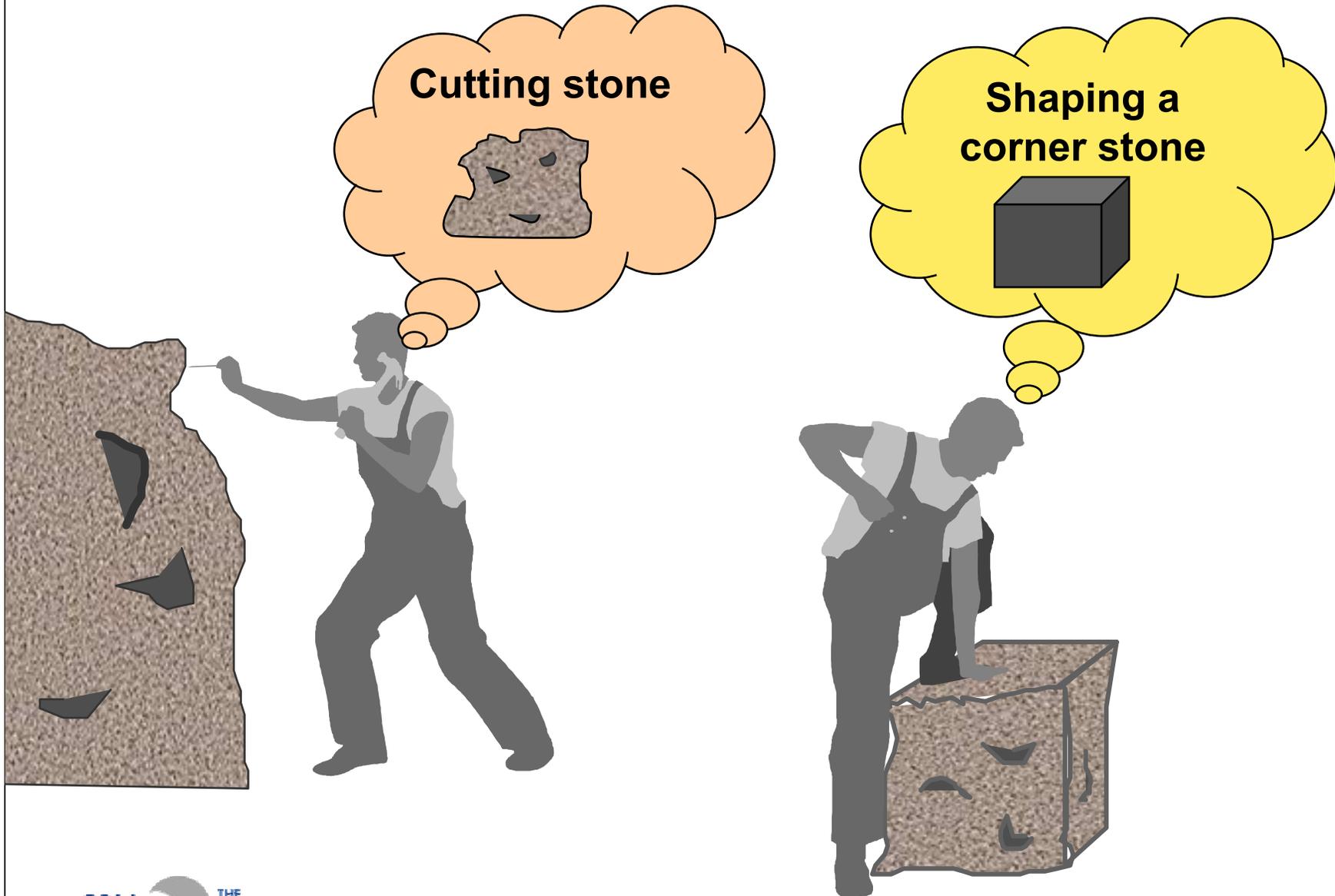
Focusing On The Long Term Objective To Reduce Rework

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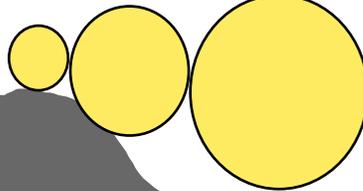
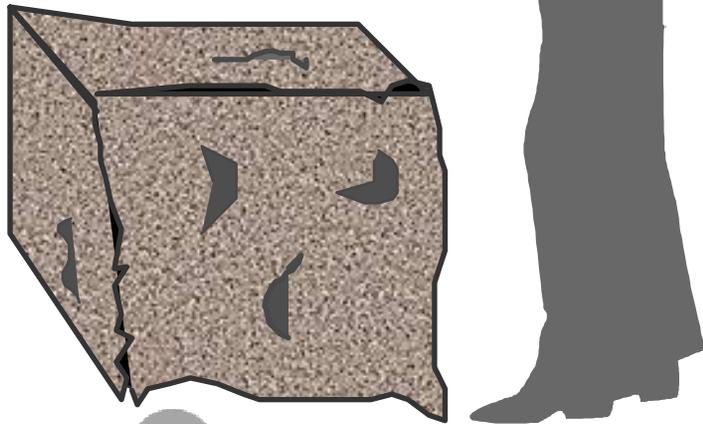


Perspective—What are you doing?



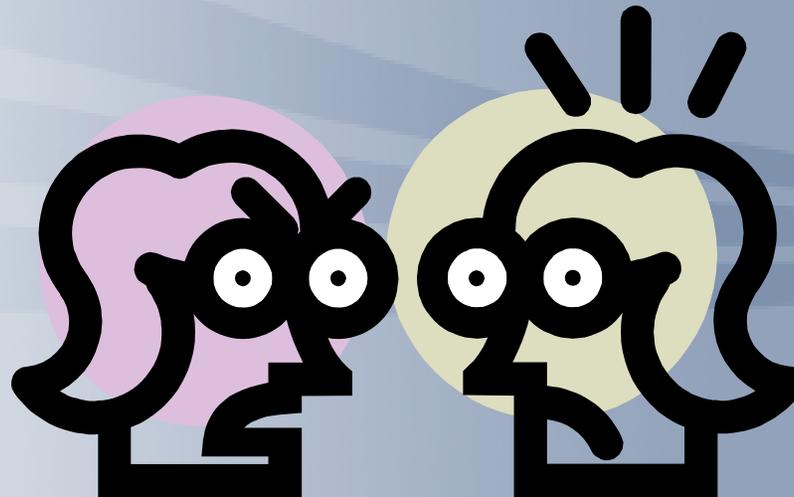


Perspective—What are you doing?



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** (Webster)
- **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?



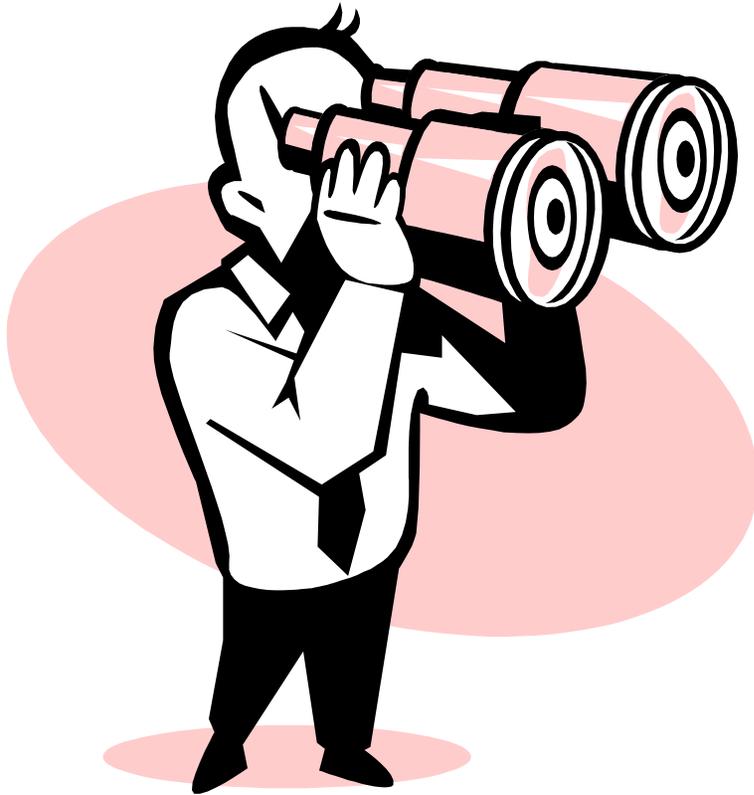


Lots Of Things Are *Called* Process

- **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”**



A Word *from* the CMMI *about* the CMMI

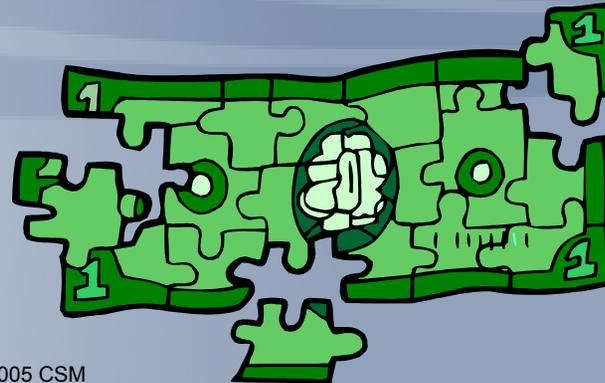
- “CMMI **models are not processes** or process descriptions. The actual processes used in an organization depend on many factors, including application domain(s) and organization structure and size. In particular, the **process areas** of a CMMI model typically **do not map one to one with the processes** 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

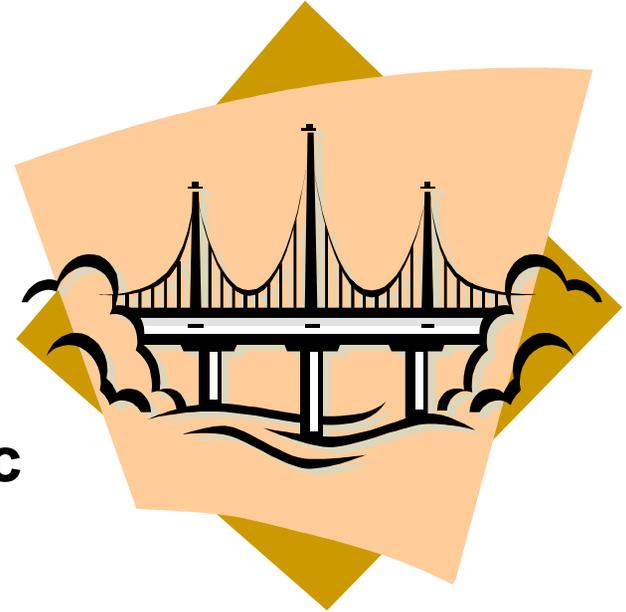




You Need an Engineered Process System

•Why

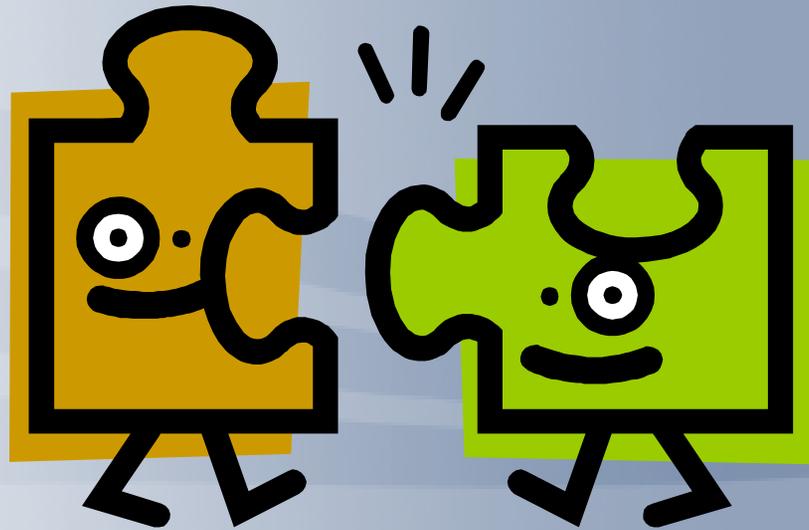
- Many user groups
- Many interfaces
- Lots of information flows
- Integrated with 6 σ , ISO-9000, etc



•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

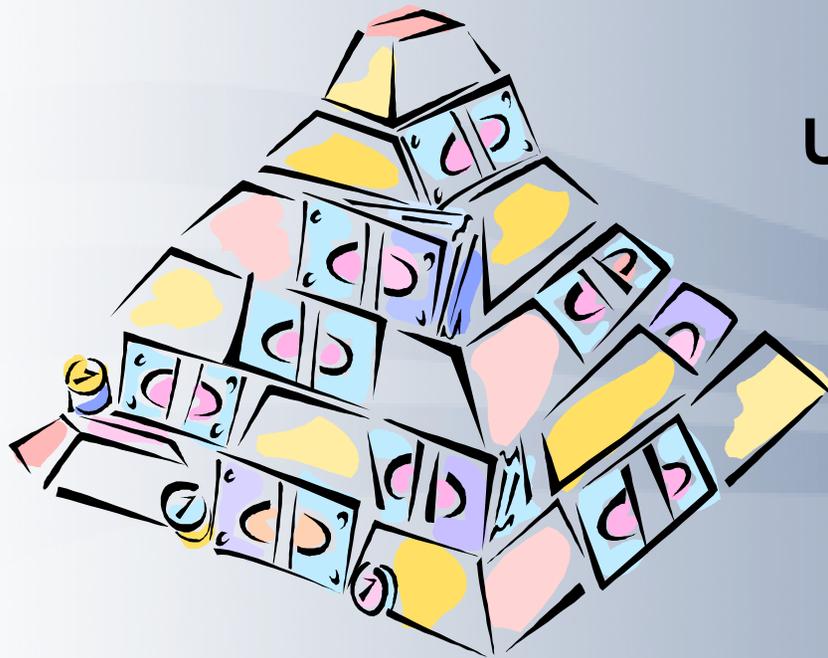




Process Element

- “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



Somewhat less at Level 3

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



Process Descriptions .1

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.



Process Descriptions -2

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.

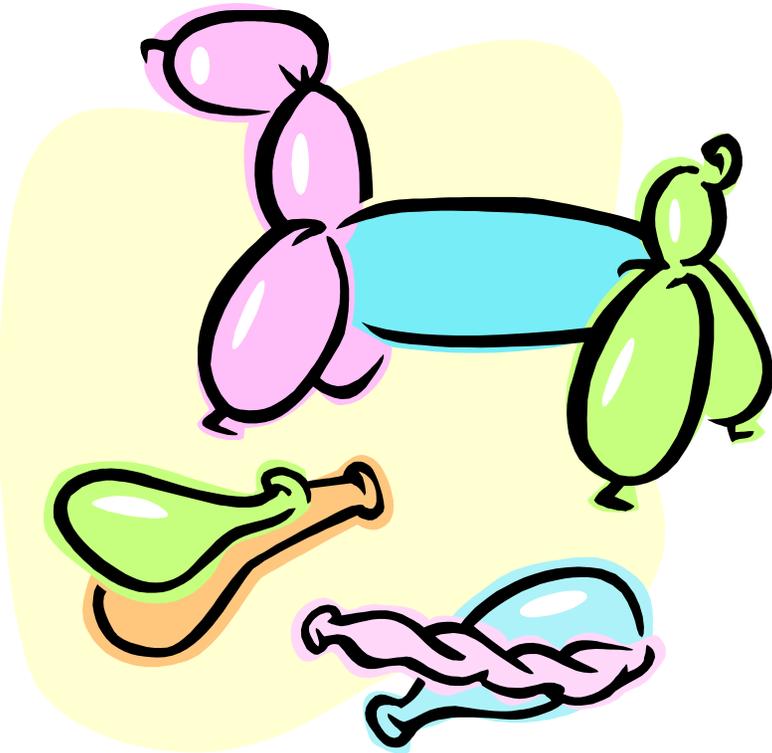
Impacts of Understanding the *SYSTEM*

**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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