

# Parallelism between CMMI Configuration Management and Process and Product Assurance

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November 10, 2009

# What is CMMI?

Capability **M**aturity **M**odel **I**ntegration

Evolved from Capability Maturity Model

- A structure/model that helps organizations examine effectiveness of processes
- Establishes priorities for improvement

# Why use CMMI?

Provides guidance

- for process improvements
- management of development, acquisition & maintenance of products and services

# Benefits of CMMI?

- Improves schedule and budget
- Improves cycle time
- Increases productivity
- Improves quality
- Increases customer satisfaction
- Improves employee morale

# Improvement Paths

## Continuous Representation

### Capability Level

Incremental improvements of process areas chosen by the organization

\* *Capability of process*

## Staged Representation

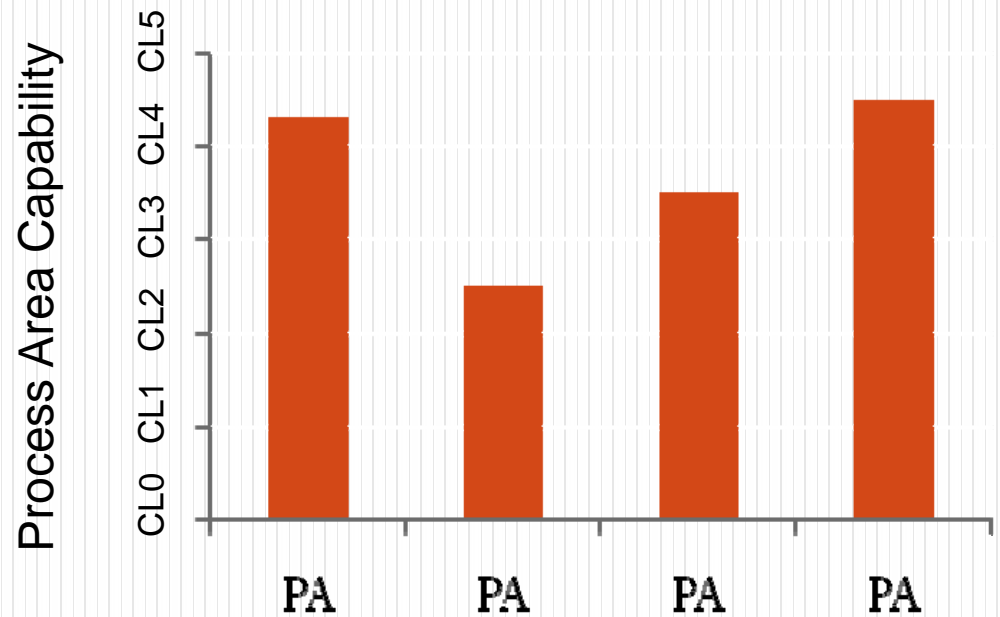
### Maturity Level

Improvement of a group of process areas

\* *Maturity of organization*

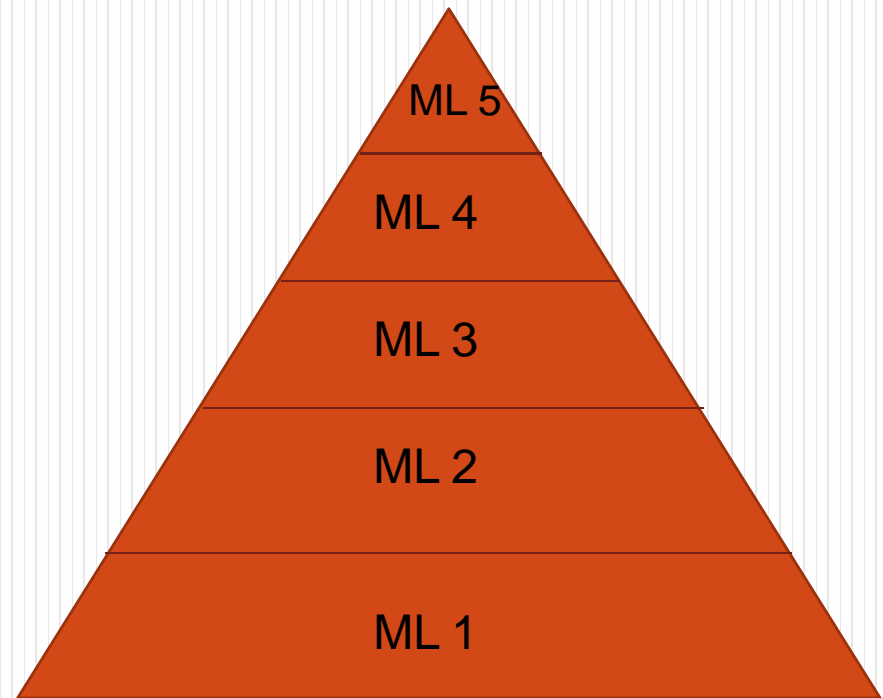
# Continuous Representation

This applies for one process area or several process areas based on an organization's business objectives; minimizing risk.



# Staged Representation

This applies for a set of process areas across an organization for organizational improvement based on grouping and ordering of processes and organizational relationships.



# Process Area Capability vs. Organizational Maturity

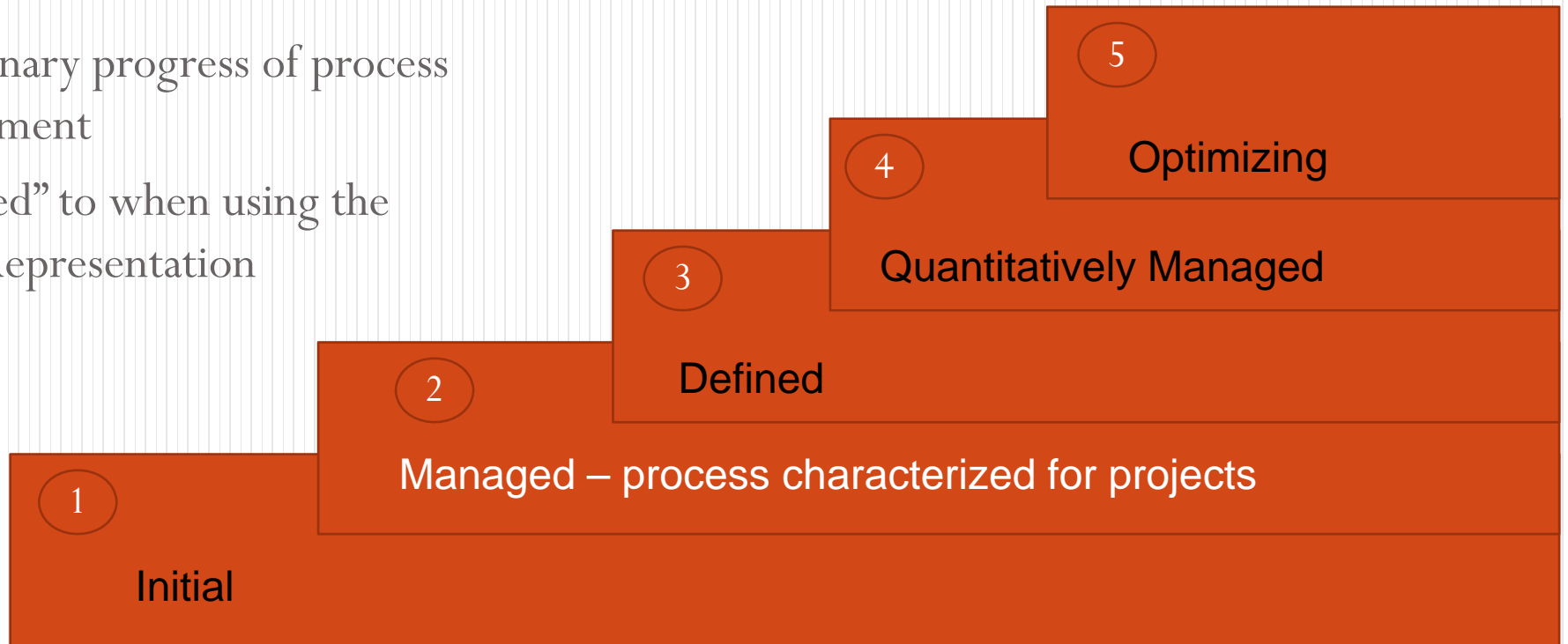
Process Area Capability deals with a set of practices relating to a single process area whereas,

Organizational Maturity relates to a set of process areas throughout an organization.

# Maturity Levels

Evolutionary progress of process improvement

“appraised” to when using the Staged Representation



# Maturity Levels

Level	Focus	Process Areas
5. Optimizing	Continuous Process Improvement	Org Innovation and Deployment Causal Analysis and Resolution
4. Quantitatively Managed	Quantitative Management	Organizational Process Performance Quantitative Project Management
3. Defined	Process Standardization	Requirements Development Technical Solution Product Integration Verification Validation Organizational Process Focus/Definition Organizational Training Risk Management ...
2. Managed	Basic Project Mgmt	Requirements Management Project Planning Project Monitoring and Control Supplier Agreement Management Measurement and Analysis Process and Product Quality Assurance Configuration Management
1. Initial	Process informal & ad hoc	

# Capability Levels

Evolutionary progress of process improvement at which an organization is “appraised” to when using the Continuous Representation.

Attained process area by process area by operating at the highest Generic Goal in addition to the Specific Goals.

# Capability Levels

Level	Focus	Process Areas
5. Optimizing	Continuous Process Improvement	Org Innovation and Deployment Causal Analysis and Resolution
4. Quantitatively Managed	Quantitative Management	Organizational Process Performance Quantitative Project Management
3. Defined	Process Standardization	Requirements Development Technical Solution Product Integration Verification Validation Organizational Process Focus/Definition Organizational Training Risk Management ...
2. Managed	Basic Project Mgmt	Requirements Management Project Planning Project Monitoring and Control Supplier Agreement Management Measurement and Analysis Process and Product Quality Assurance Configuration Management
1. Performed		Performance may NOT be stable

# Process Areas in Continuous Representation

Category	Process Areas
Project Management	Project Planning Project Monitoring and Control Supplier Agreement Management Integrated Project Management (IPPD) Integrated Supplier Management (SS) Integrated Teaming (IPPD) Risk Management Quantitative Project Management
Support	Integration (IPPD) Measurement and Analysis Analysis and Resolution Decision Analysis and Resolution Organizational Environment Process and Product Quality Assurance Configuration Management
Engineering	Requirements Management Requirements Development Technical Solution Product Integration Verification Validation
Process Management	Organizational Process Focus Organizational Process Definition Organizational Training Organizational Process Performance

# Process and Product Quality Assurance (PPQA)

*A Support Process Area at Maturity Level 2*

**Purpose: provide objective insight into processes and associated work products.**

Specific Goal 1: Objectively Evaluate Processes and Work Products

Specific Goal 2: Provide Objective Insight

# Process and Product Quality Assurance (PPQA)

*A Support Process Area at Maturity Level 2*

**Purpose: provide objective insight into processes and associated work products.**

Generic Goal 1: Institutionalize a managed process

Generic Goal 2: Institutionalize a defined process

# Process and Product Quality Assurance (PPQA) – Cont.

## Summary –

- Objectively evaluating processes and products
- Communicating quality issues
- Ensuring closure of nonconformance issues
- Establishing records
- Reporting metrics

# Process and Product Quality Assurance – Cont.

Summary –

Supports the delivery of high quality products and services by providing the project staff and managers at all levels with appropriate visibility into and feedback on processes and associated work products for the life of the project.

# Configuration Management

*A Support Process Area at Maturity Level 2*

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

# Configuration Management

Specific Goal 1: Establish baselines

Specific Goal 2: Track and control changes

Specific Goal 3: Establish Integrity

# Configuration Management

Generic Goal 2: Institutionalized a Managed Process

Generic Goal 2: Institutionalized a Defined Process

# Configuration Management

## **Summary**

Identifying configuration items

Establish a configuration management system

Creating or releasing baselines

Tracking change requests and controlling changes

Establishing records

Conduct configuration audits

# Parallelism

## Process & Product Quality

## Configuration Mgmt

### Assurance

- appropriate visibility (eyes)
- close nonconformances
- ensure planned processes are implemented
- begin in the early phases of projects to develop plans, processes, stds, procedures that add value that fit the needs

- establish/maintain integrity (ears)
- begin in the early phases of projects to develop plans, & identify configuration items (CI)
- configuration control / auditing
- status accounting
- release management

# CM & QA Relationship

## **Both CM & QA**

- conduct audits
- develop plans of activities
- collect and report on metrics

## **QA audits CM**