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matter

“CMMI and OPM3”

Montgomery PMI Chapter Meeting

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Michael J. (Mike) Bradley

The Cahaba Group, LLC

Acknowledgments

Terms like these are often used in the following material:

CMM[®] Framework
Capability Maturity ModelSM Framework

**SM Capability Maturity Model is a service mark of
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Agenda

- Very high-level view of the OPM3
- Software Engineering Institute (SEI)
- Capability Maturity Model – Integrated (CMMI)
 - Brief Description
 - CMMI Product Suite
- CMMI and OPM3 Contrast

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Very high-level view of the OPM3

OPM – What is it?

- According to the PMI:

Organizational **P**roject **M**anagement is the systematic management of projects, programs, and portfolios in alignment with the achievement of the organization's strategic goals.

OPM3 – What is it?

- **O**rganizational **P**roject **M**anagement **M**aturity **M**odel (OPM3):
 - A Model for applying Project Management principles to the enterprise
 - Begins to establish a standard for Organizational Project Management
 - Adds Program and Portfolio domains
 - Based on the PMBOK
 - The quality improvement cycle is embedded in the model
 - Provides a model to assess the current state of maturity against the standard
 - Ties organizational business strategy to projects

OPM3 Organization

Model Components

Best Practice

Capability

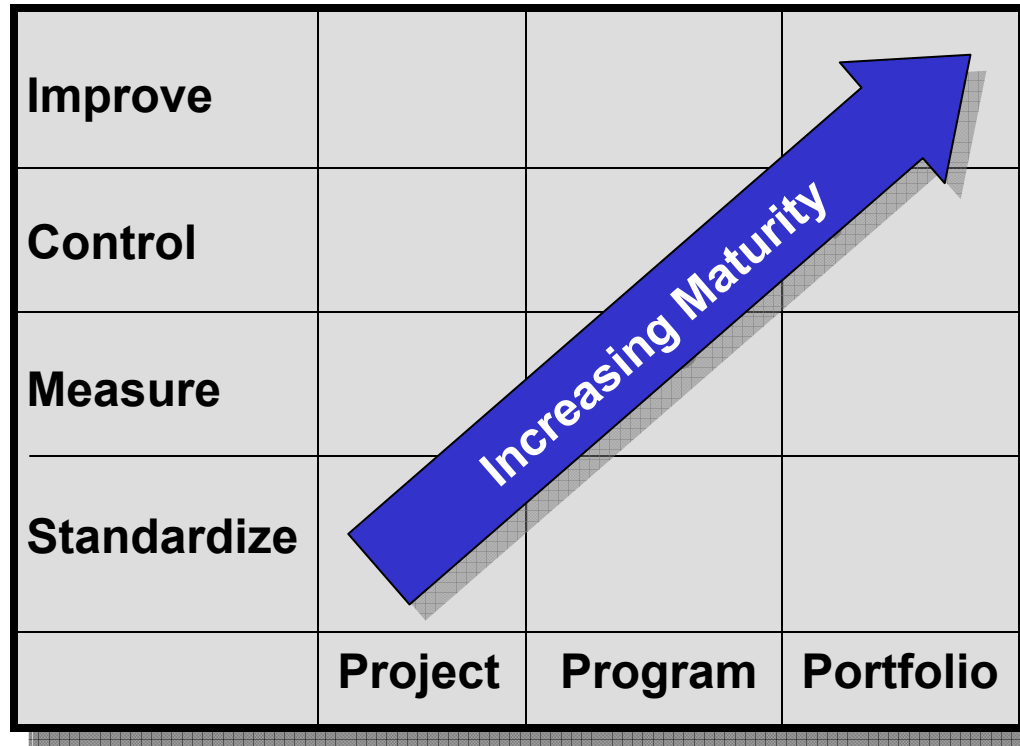
Outcome

Key Performance
Indicator

OPM3 Example

- Best Practice: Manage Project Resource Pool
 - Capability: Develop a Skills Database
 - Outcome: The organizational skills database includes skills of the individual staff members
 - Key Performance Indicator: Skills Gap Analysis Results

OPM3 – What is it?



Organizational Project Management Maturity Model

Software Engineering Institute (SEI) Capability Maturity Model – Integrated (CMMI)

Software Engineering Institute (SEI)

- Established 1984
- Carnegie Mellon University – Pittsburgh PA
- Large amount of US Government Funding (DOD)
- For Systems and Software
 - development, support, and maintenance of CMMs
 - addressing software engineering and other disciplines that have an affect on software development and maintenance
 - providing integrated process improvement reference models
 - building broad community consensus
 - harmonizing with related standards
 - enabling efficient improvement across disciplines relevant to software development and maintenance
 - Authorizing Lead Assessors/Appraiser, Instructors, etc.
 - Publishing appraisal results - in the Maturity Profile
 - Working with standards organizations to help further the cause of for software process improvement
 - Improving and supporting CMM-based appraisals of organizations
- Other areas of work include such things as:
 - Security (CERT)
 - System Architecture
 - Reuse

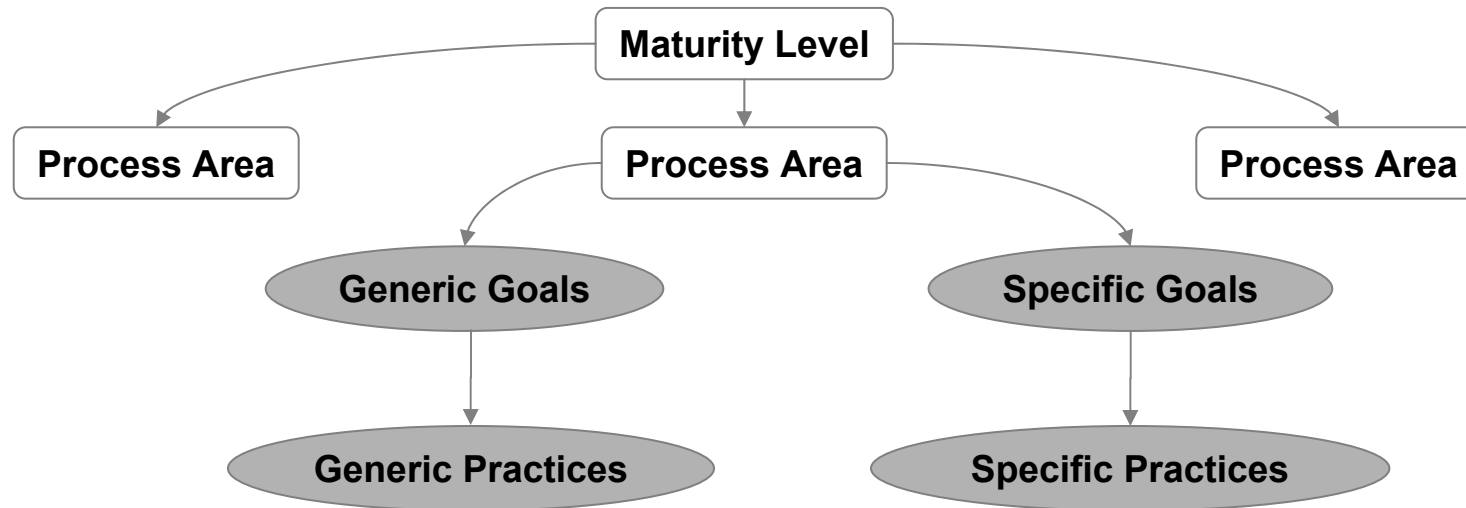
CMMI - Description

- Purpose:
 - provide guidance for improving an organization's processes and its ability to manage the development, acquisition, and maintenance of products and services.
- Uses:
 - place proven practices into a structure that helps an organization assess its organizational maturity and process area capability, establish priorities for improvement, and guide the implementation of these improvements.
 - provide guidance for organizations to use when they develop or revise their processes.
- Called the CMMI because it evolved from separate capability models from software, systems, integrated teaming, and supplier sourcing.

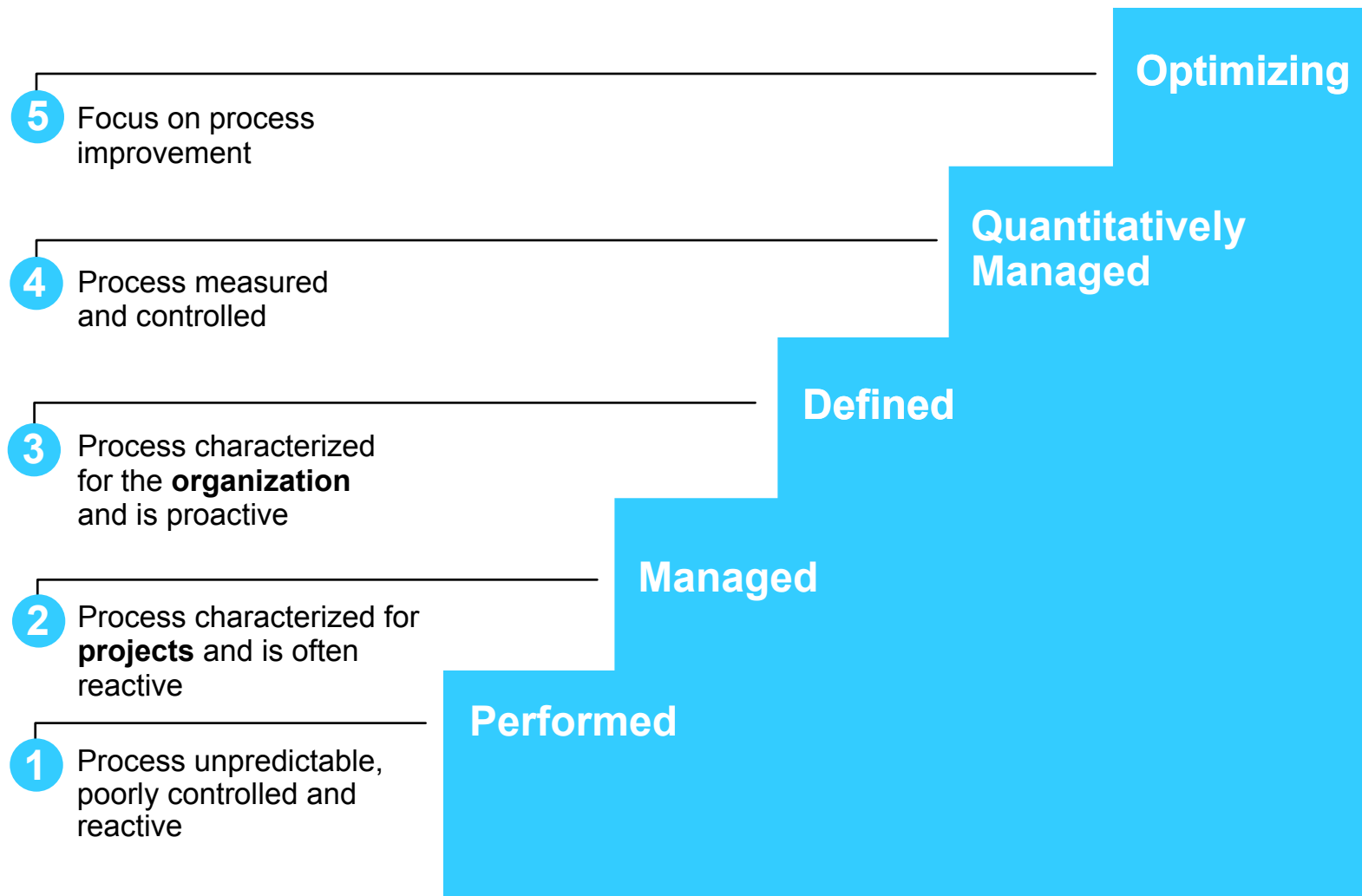
CMMI Example

- Maturity Level 2 - Managed
 - Process Area: Requirements Management
 - Goal 1: Requirements are managed and inconsistencies with project plans and work products are identified.
 - Specific Practice 1.1: Manage changes to the requirements as they evolve during the project.

Structure of the CMMI Staged Representation



The Maturity Levels



CMMI – Product Suite

- Versions of the model:
 - Software Engineering, Systems Engineering, Integrated Product and Process Development, and Supplier Sourcing
- Benchmark-quality appraisal methodology (SCAMPI) which provides ratings and definitive, actionable process improvement opportunities.
- Certification/Authorization process and administration:
 - Lead Appraisers/Assessors
 - Model Instructors
- Training
 - Model
 - Introduction
 - Intermediate Comcpets
 - Certification
 - Lead Appraisers/Assessors
 - Model Instructors
- Appraisal Results
 - Web-based repository
 - Self-identification
 - Mid-2004

**Possible vision of where
PMI and OPM3
may be going**

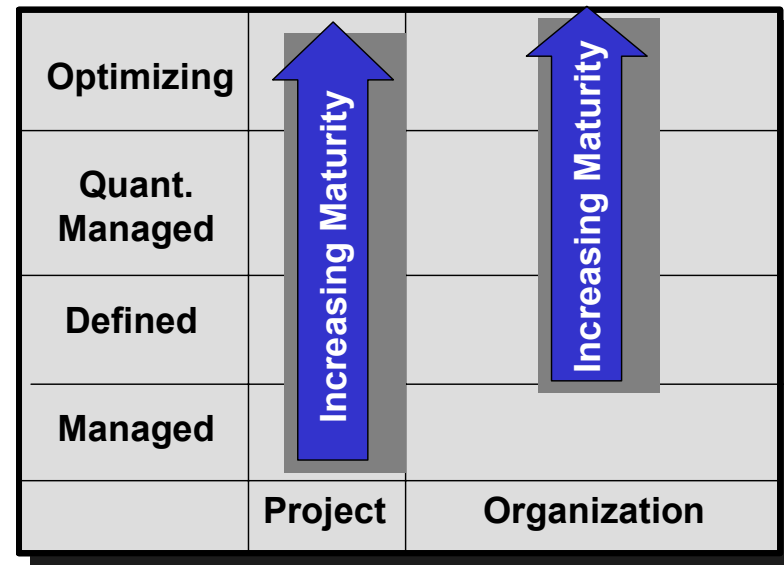
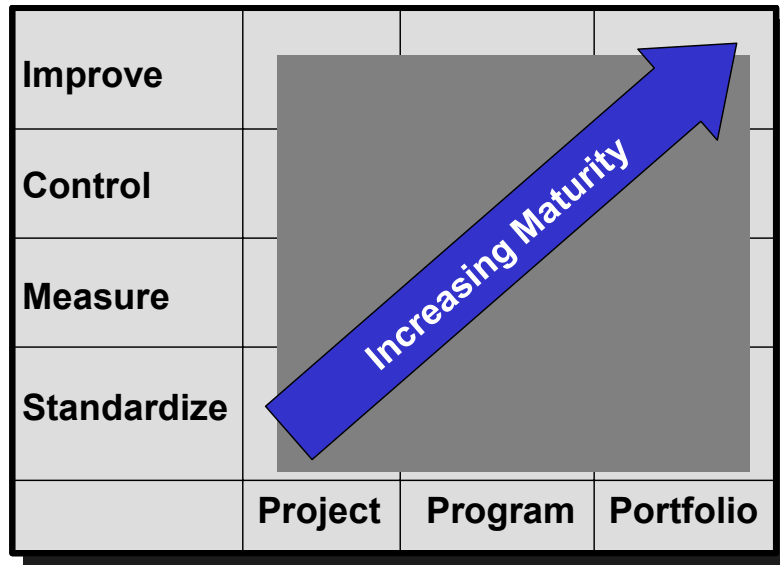
CMMI and OPM3 Contrast

Potential Areas of CMMI Overlap with PMBOK and OPM3

Level	Focus	Process Areas
5 Optimizing	<i>Continuous process improvement</i>	Organizational Innovation and Deployment Causal Analysis and Resolution
4 Quantitatively Managed	<i>Quantitative management</i>	Organizational Process Performance Quantitative Project Management
3 Defined	<i>Process standardization</i>	Requirements Development Technical Solution Product Integration Verification Validation Organizational Process Focus Organizational Process Definition Organizational Training
		(SS) Integrated Project Management Integrated Supplier Management Risk Management
		(IPPD) Decision Analysis and Resolution Organizational Environment for Integration
		(IPPD) Integrated Teaming
2 Managed	<i>Basic project management</i>	Requirements Management Project Planning Project Monitoring and Control Supplier Agreement Management Measurement and Analysis Process and Product Quality Assurance Configuration Management
1 Performed		

Complementary!

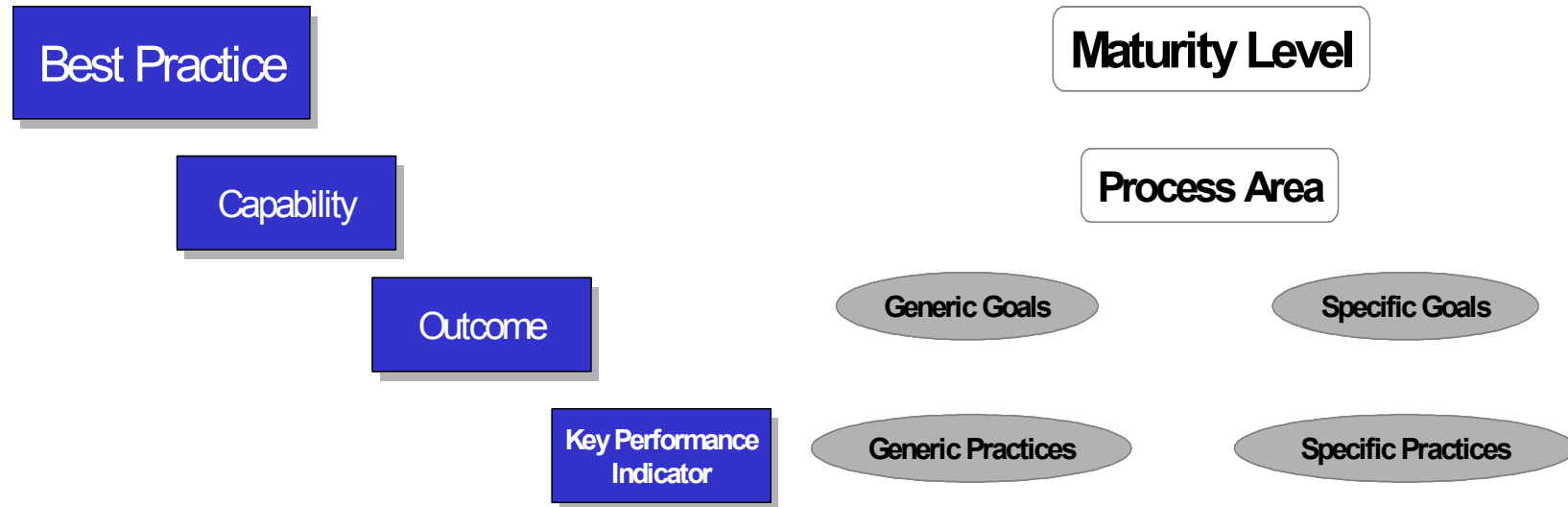
Model Scope Difference Examples



- CMMI does not directly recognize program or portfolio management (financial, HR, etc.)
- In addition to Project Management, the CMMI addresses most of the system/software development activities

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Model Structure Comparison



- The CMMI has explicitly defined Maturity Levels
- Best Practices are roughly analogous to Process Areas
 - In the OPM3, many of the BPs are repeated with each domain
- Capabilities are roughly analogous to Goals
 - In the OPM3, many of the Capabilities are repeated with each domain
- Outcomes are analogous to Practices
- Key Performance Indicators are analogous to “Typical Work Products”
 - Not required elements in the CMMI

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For More Information About CMMI

- Go to CMMI Website
 - <http://sei.cmu.edu/cmml>
 - <http://seir.sei.cmu.edu/seir/>
 - <https://bscw.sei.cmu.edu/pub/bscw.cgi/0/79783>
 - <http://dtic.mil/ndia> (first second, and third annual CMMI Conferences)
 - <http://www.faa.gov/aio>

Summary

- **Organizational Project Management Maturity Model (OPM3)**
 - Based on PMBOK
 - Adds Quality
 - Adds Domains of Project, Program, Portfolio
 - Adds Best Practices, Capabilities, Outcomes, Key Performance Indicators
 - Adds Assessment and Improvement
- **Capability Maturity Model Integrated (CMMI)**
 - Product Suite provides a vision of where the PMI and OPM3 may be going
 - Started with Software and evolved to include other disciplines such as systems, integrated teaming and supplier sourcing
 - Maturity Levels, Process Areas, Goals, and Practices
 - Basically a version 2 or 3 of model, appraisal, infrastructure, etc.
- **OPM3 – CMMI Comparison**
 - Structures are similar
 - The two models are complementary

Mike Bradley

- Michael J. (Mike) Bradley is a Software Engineering Institute (SEI) Authorized SCAMPI Lead AppraiserSM, Introduction to the CMMI Instructor, and CBA-IPI Lead Assessor. He has over 30 years of Information Technology experience and provides software process improvement assessments, consulting, and training. He has performed training, consulting and appraisals in North and South America, Europe, China and Korea. Mike is regularly selected to give presentations and lead workshops at industry conferences - annual U.S. and European SEPG (Software Engineering Process Group); provincial software conference in China; Korean Software Institute.

More Information

- For more information:

THE CAHABA GROUP, LLC

www.thecahabagroup.com

info@thecahabagroup.com

205-991-9300

205-991-0221 (fax)

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