



How to Develop Highly Useable CMMI[®] Documentation

Presenter:

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SEI Authorized

- CBA IPI Lead Assessor (CMM[®])
- SCAMPI Lead AppraiserSM (CMMI[®])
- Introduction to CMMI[®] Instructor



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- **CMM[®] -Based Appraisal for Internal Process Improvement (CBA IPI): Method Description**, CMU/SEI-96-TR-007, (c) 1996 by Carnegie Mellon University
- **Capability Maturity Model[®] Integration (CMMI[®]), Version 1.1 (CMMISM-SE/SW/IPPD/SS, V1.1) Continuous Representation**, CMU/SEI-2002-TR-011, (c) 2002 by Carnegie Mellon University
- **Capability Maturity Model[®] Integration (CMMI[®]), Version 1.1 (CMMISM-SE/SW/IPPD/SS, V1.1) Staged Representation**, CMU/SEI-2002-TR-012, (c) 2002 by Carnegie Mellon University
- **Standard CMMISM Assessment Method for Process Improvement: Method Definition, Version 1.1 (SCAMPISM, V1.1)**, CMU/SEI-2001-HB-2001, (c) 2001 by Carnegie Mellon University

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The mission of Cooliemon, LLC is:

*“helping organizations achieve
excellence through process improvement”*

Our goal is to focus your process improvement efforts to:

- improve quality and productivity
- reduce operating costs
(i.e., reduce rework, waste and duplicate effort)
- capture the market with high quality products and services
- help you become the industry standard by which your competitors measure themselves



Agenda

CMMI® Model Structure

SEI's Operational Framework

CMMI® and Policy Documents

CMMI® and Standard Documents

CMMI® and Process/Procedure Documents

Summary & Questions



CMMI[®] Staged Representation

Level	Focus	Process Areas <i>Including IPPD</i>
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 <i>Integrated Project Management (2 IPPD Goals)</i> Risk Management Decision Analysis and Resolution <i>Organizational Environment for Integration (IPPD)</i> <i>Integrated Teams (IPPD)</i> Integrated Supplier Management (SS)
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 Initial		



Risk
Rework



Process Area Contents (1)

Major contents of each PA in the CMMI® Staged Representation:

Purpose

Introductory Notes

Related Process Areas

Practice-to-Goal Relationship Table

Specific Goals and Specific Practices

Generic Goals and Generic Practices

Typical Work Products

Subpractices

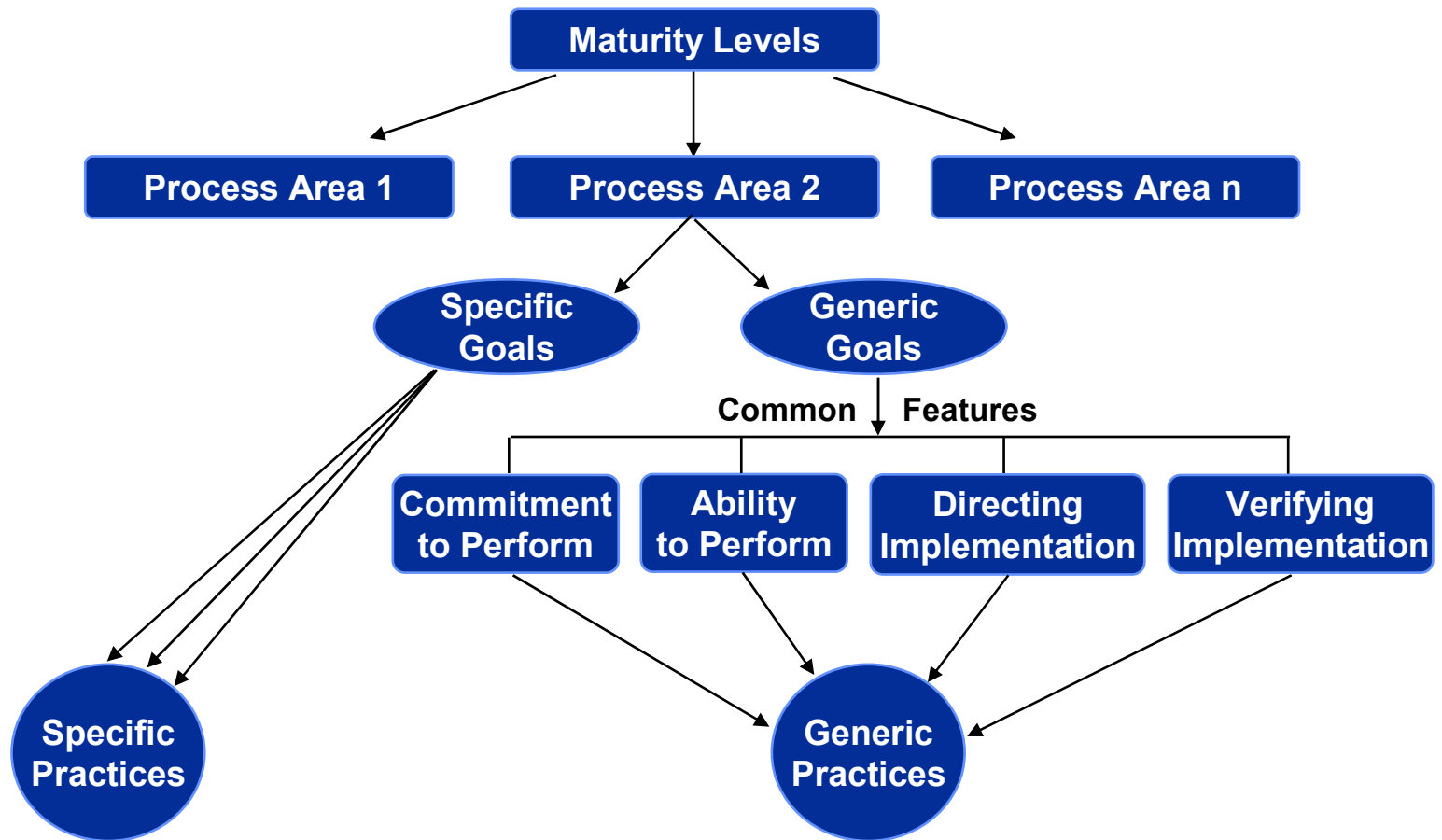
Notes

Discipline Amplifications

Generic Practice Elaborations



Model Components in the Staged Representation





Generic Practices

- GP 2.1: Establish an Organizational Policy
- GP 2.2: Plan the Process
- GP 2.3: Provide Resources
- GP 2.4: Assign Responsibility
- GP 2.5: Train People
- GP 2.6: Manage Configurations
- GP 2.7: Identify and Involve Relevant Stakeholders
- GP 2.8: Monitor and Control the Process
- GP 2.9: Objectively Evaluate Adherence
- GP 2.10: Review Status with Higher Level Management

- GP 3.1: Establish a Defined Process
- GP 3.2: Collect Improvement Information



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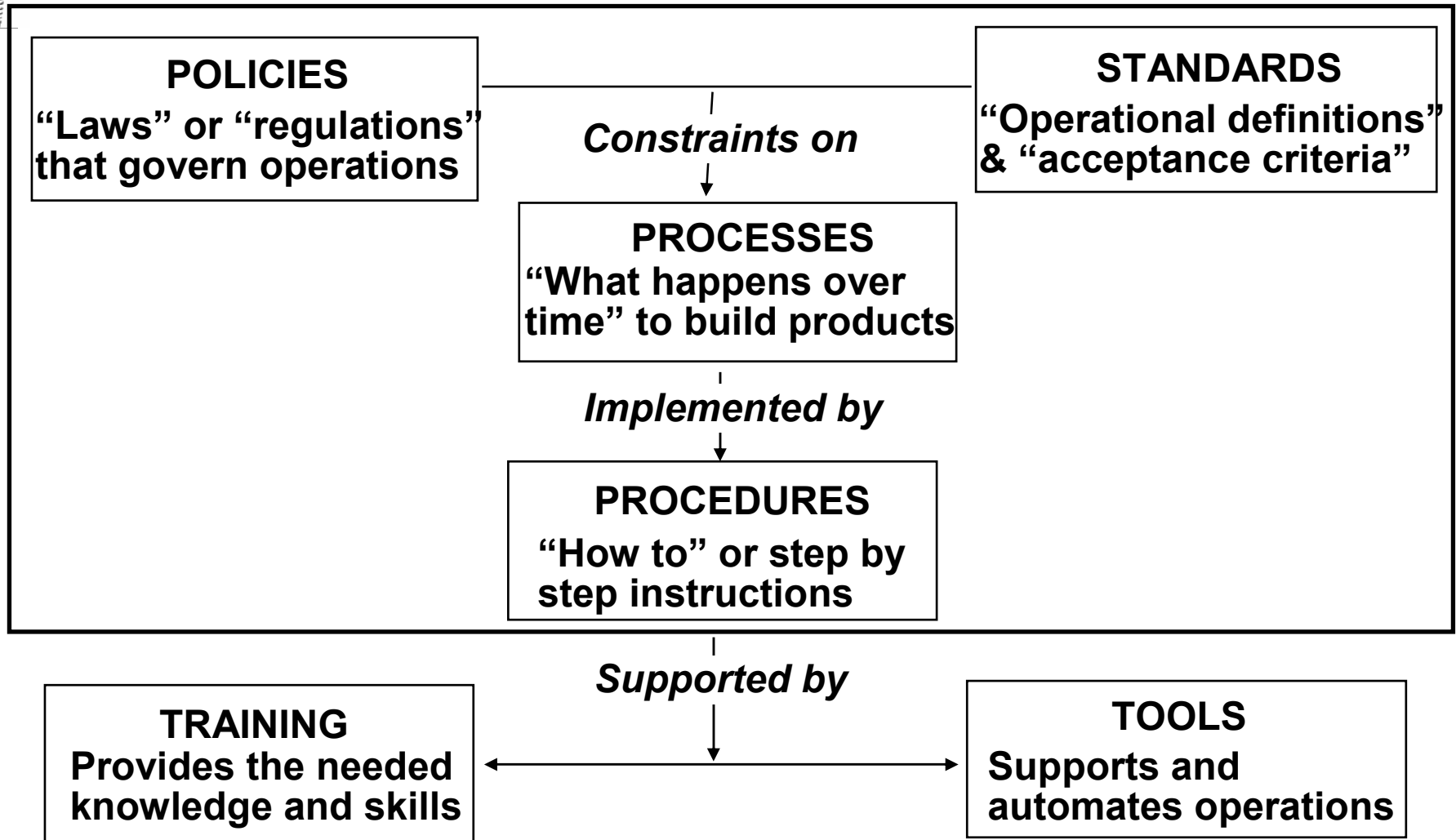
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Operational Framework



- Slide adapted from “A Software Process Framework for the SEI Capability Maturity Model”, CMU/SEI-94-HB-01

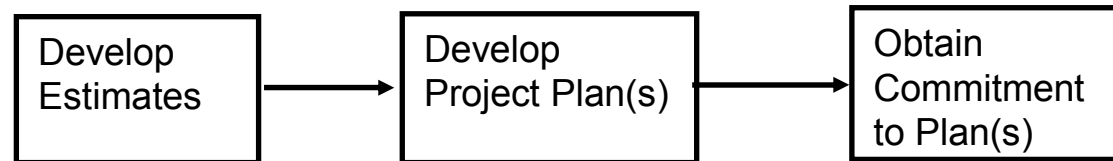


Example: Project Planning PA

Policy: “All projects will establish and maintain plans that define project activities.”

Standards: Project Plan Template

Process:



Procedure: Size Estimation Procedure
(e.g., *Wide Band Delphi*)

Training: Project Planning Training

Tools: Size Estimation tools
(e.g., *SEER; COCOMO II*)

• Slide adapted from the SEI Software Engineering Symposium, 1993



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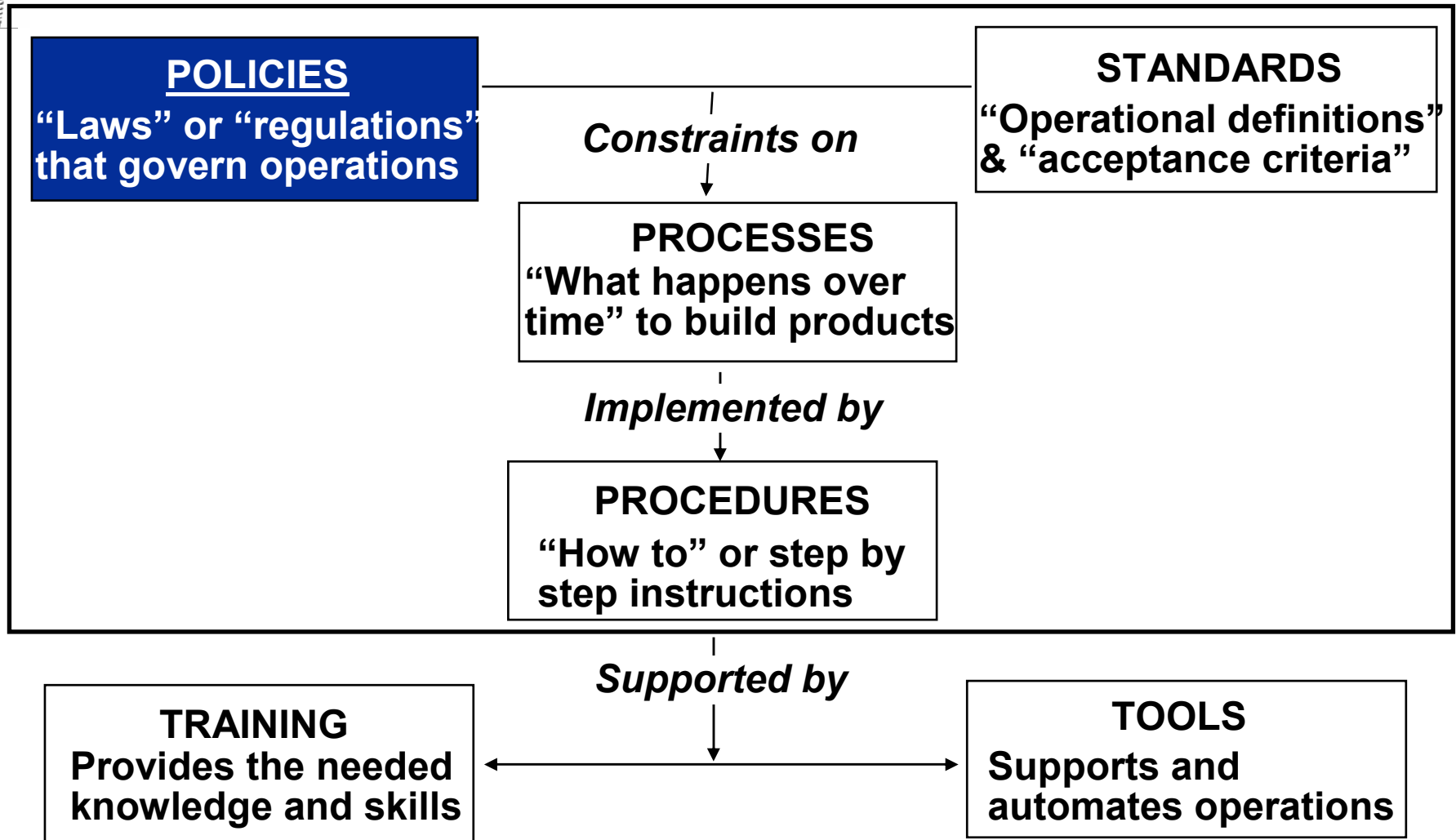
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GP 2.1 Commitment to Perform

GP 2.1: (CO 1) Establish an Organizational Policy

Establish and maintain an organizational policy for planning and performing the process.

The purpose of this generic practice is to define the organizational expectations for the process and make these expectations visible to those in the organization who are affected.

In general, senior management is responsible for establishing and communicating guiding principles, direction, and expectations for the organization.



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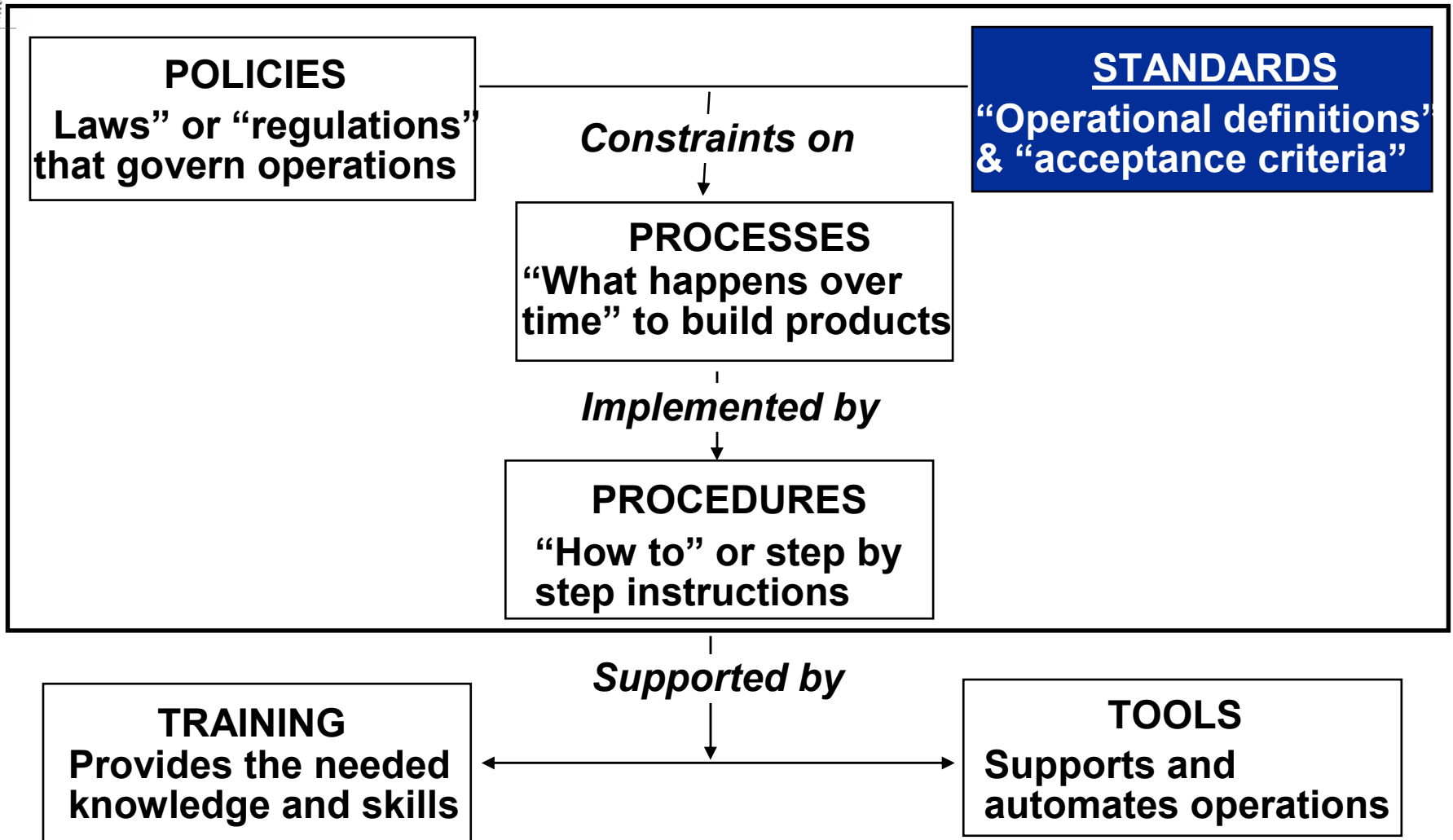
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Example: CMMI[®] Standard

GENERIC PRACTICES (GP)

GP 2.1: Establish an Organizational Policy

GP 2.2: Plan the Process

GP 2.3: Provide Resources

GP 2.4: Assign Responsibility

GP 2.5: Train People

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GP 2.8: Monitor and Control the Process

GP 2.9: Objectively Evaluate Adherence

GP 2.10: Review Status with Higher Level Management



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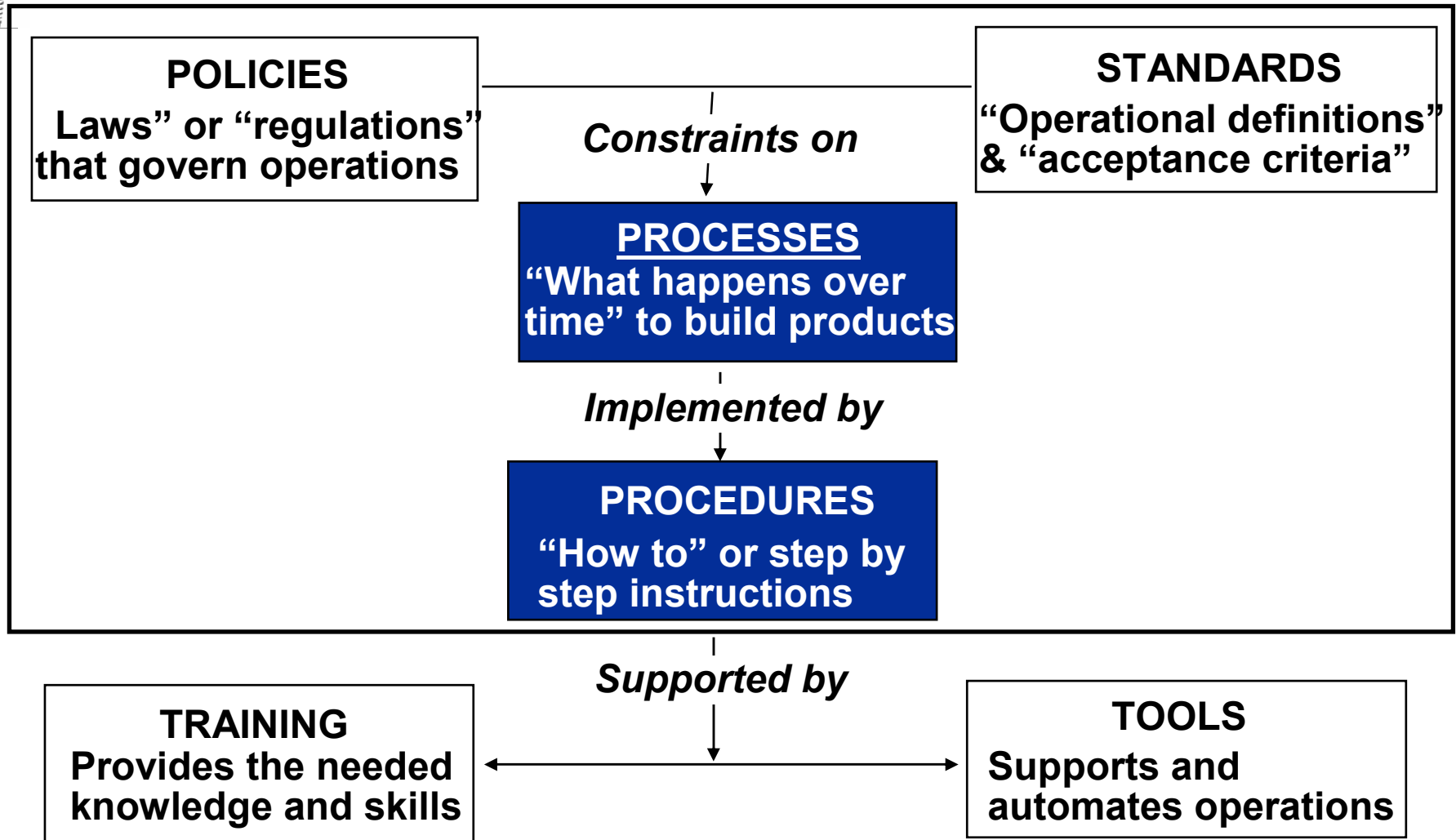
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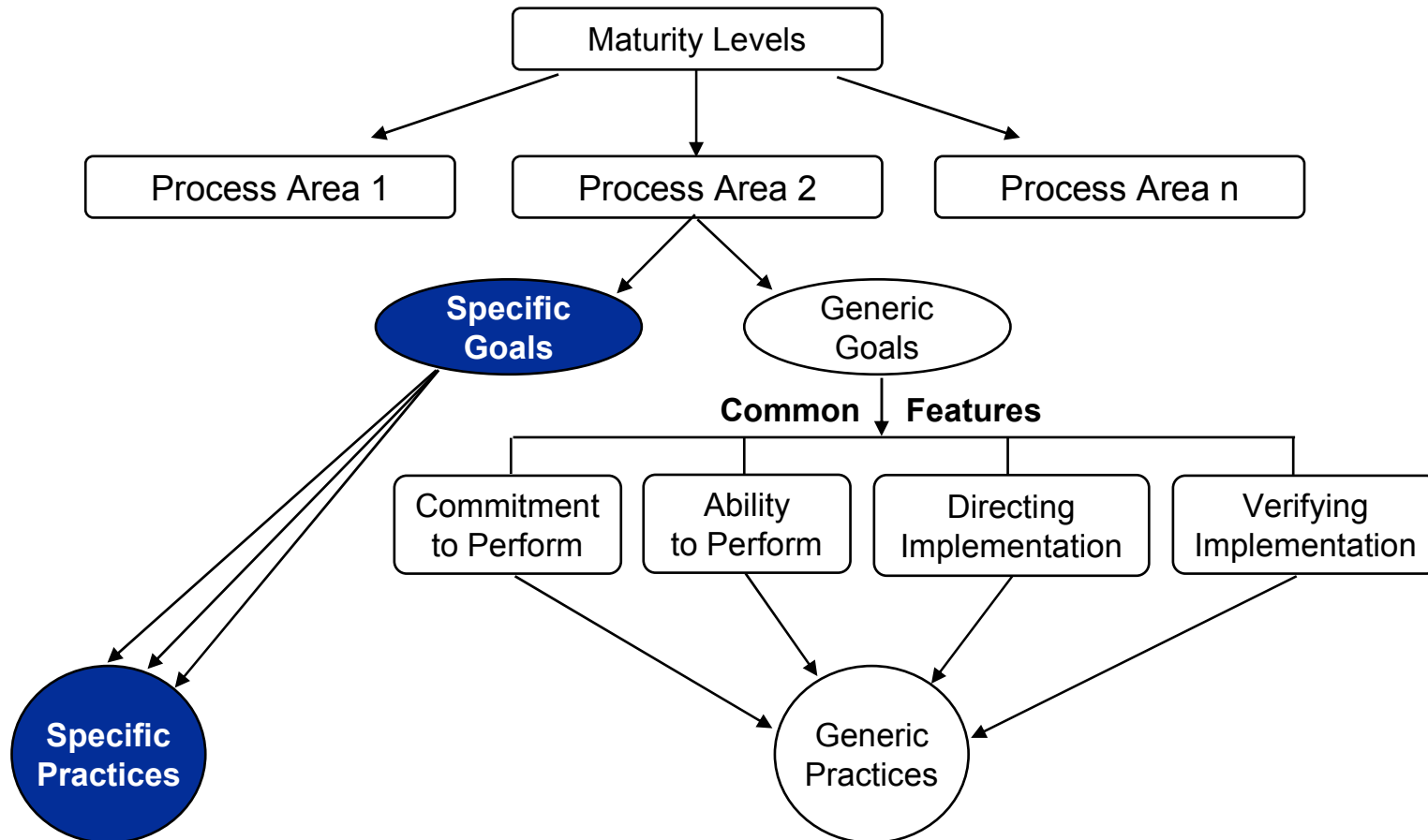
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Model Components: SG & SP





Fundamental Building Blocks

Agent: the accomplisher or performer that carries out the action to achieve or create the product, service, or result
(e.g., Stakeholder, Relevant Stakeholders in CMMI®)

Artifact: any product, service or result
(e.g., Standards, Typical Work Products in CMMI®)

Activity: the action taken to create or achieve the product, service, or result
(e.g., Processes, Procedures, SP's in CMMI®)

**"Generic" Definitions from past work in process definition field*



Applying the Building Blocks

1. **Why is this activity performed?** (*purpose*)
2. **Who does what activity?** (*roles*)
3. **What are the inputs?** (*inputs*)
4. **When does the activity begin?** (*Entry criteria*)
5. **How is the activity implemented?** (*Tasks; subactivities*)
6. **When does the activity end?** (*eXit criteria*)
7. **What are the outputs?** (*outputs*)
8. **How can you measure the performance of this activity?**
9. **Sequence (What activity is performed prior & after this one?)**



Example: CMMI[®] Process (Entry/Exit Criteria)

GENERIC PRACTICES (GP)

GP 2.1: Establish an Organizational Policy

GP 2.2: Plan the Process

GP 2.3: Provide Resources

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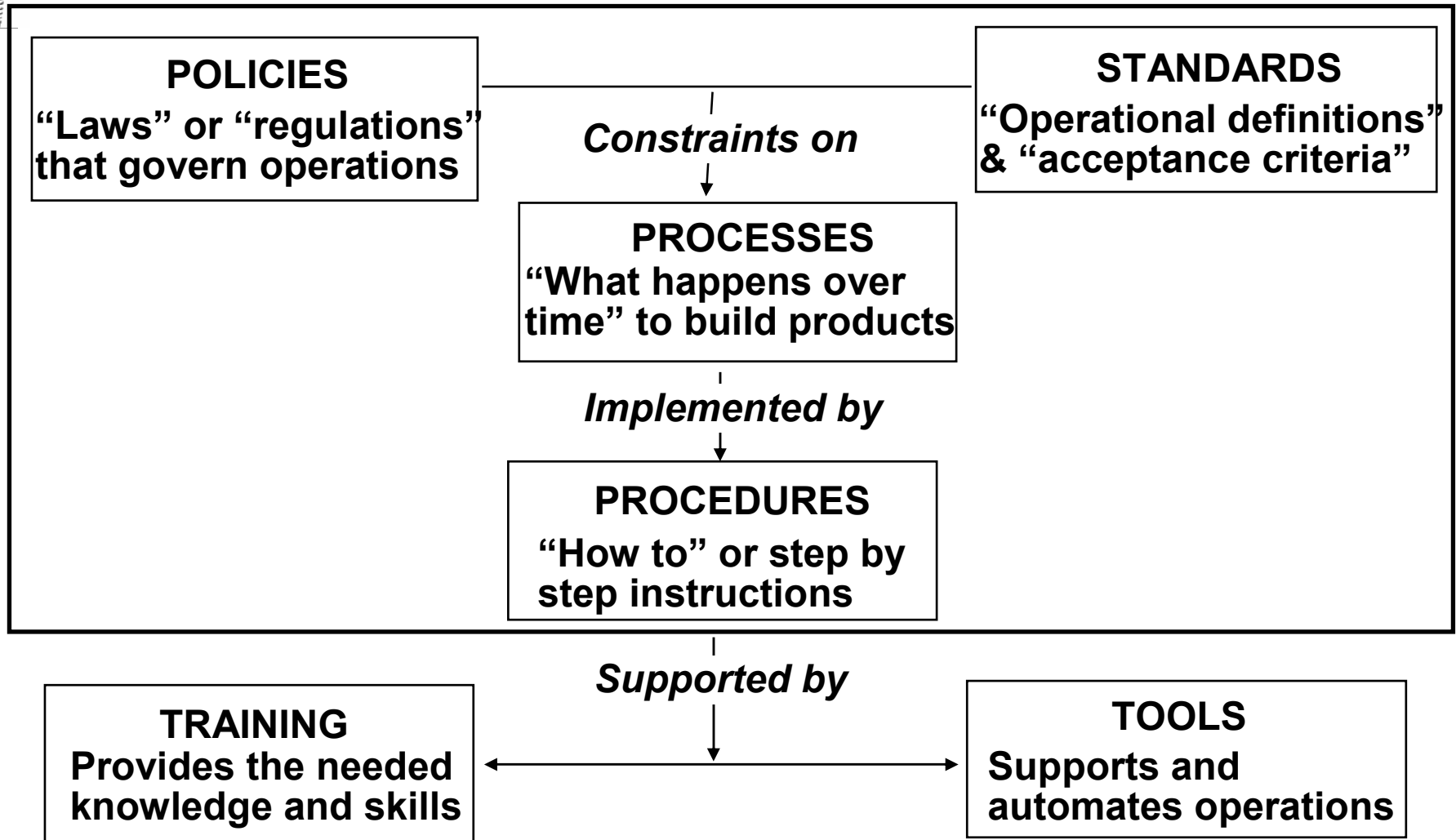
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