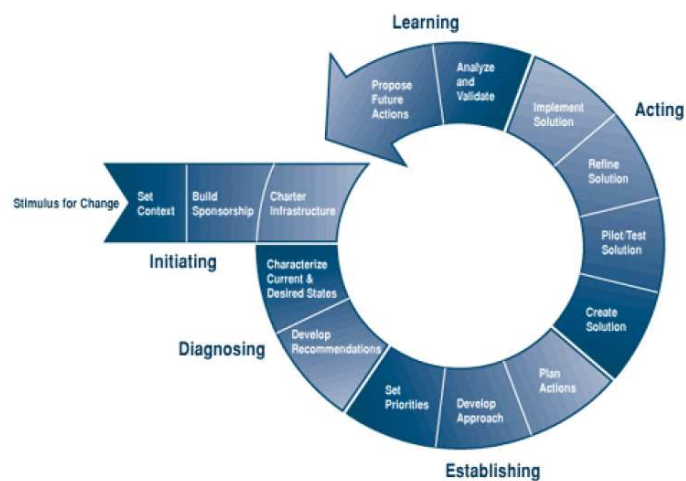


MODELO IDEAL

Software Engineering Institute



The IDEALSM Model

I – Initiating Phase

- **Establish process improvement sponsorship**
 - CMMI OPF distinguishes:
 - senior management support
 - implementation support vested in the engineering process group
- **Set process improvement goals & objectives:**
 - reduce time to market
 - increase productivity
 - improve delivery timeliness and predictability
 - reduce number of delivered defects
 - increase market share
 - achieve ISO registration and/or CMMI maturity level **(this should NOT be the only goal)**

D – Diagnosing Phase

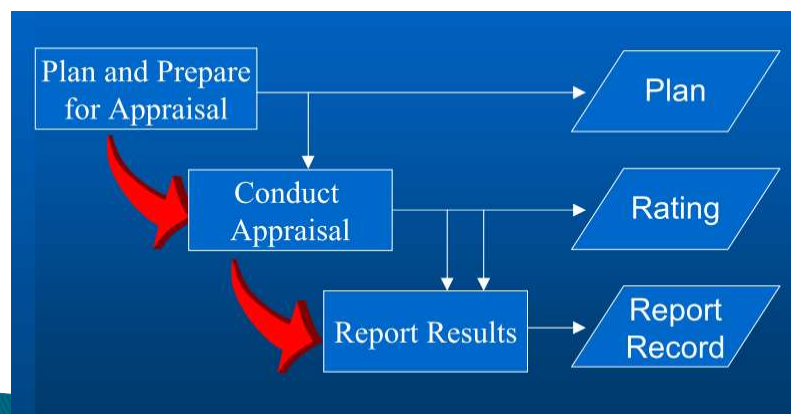
- **Perform a gap analysis**
 - ISO pre-registration gap analysis
 - No standard reporting format
 - SCAMPI Class A, B, C
 - Class C - adequate for experienced organizations
 - Class A - preferred for inexperienced organizations (easier to get staff buy-in)
- **Gap Analysis report(s) will be used in process improvement planning**
 - SCAMPI report is quite detailed

Selecting a GAP Analysis Method

- **Characteristics**

- Accuracy
- Repeatability
- Maturity / Capability Level ratings
- Duration / Cost

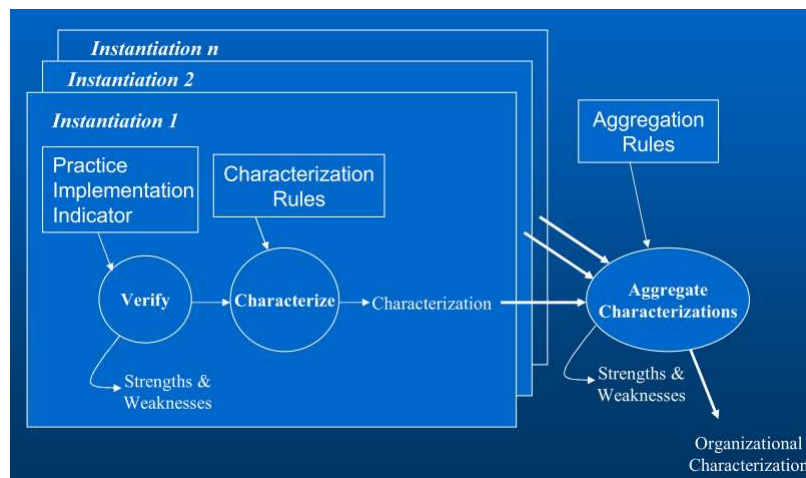
SCAMPI Phases



SCAMPI Phase – Details

Phase		Process	
1	Plan and prepare for appraisal	1.1	Analyze requirements
		1.2	Develop appraisal plan
		1.3	Select and prepare team
		1.4	Obtain and analyze initial objective evidence
2	Conduct appraisal	2.1	Examine objective evidence
		2.2	Verify and validate objective evidence
		2.3	Document objective evidence
		2.4	Generate appraisal results
3	Report results	3.1	Deliver appraisal results
		3.2	Package and archive appraisal results

SCAMPI – Conduct Appraisal



SCAMPI ASSESSMENT RESULT - SUMMARY																								
PA	RM	PP	PMC	SAM	MA	PPQA	CM	RD	TS	PI	VE	VAL	OFF	OPD	OT	IPM	RSKM	IT	DAR					
PA Rating ->	S	S	U	NR	U	S	S	S	U	S	S	U	S	S	S	U	U	NR	U					
Specific Goal 1	S	S	U	NR	U	S	S	S	U	S	S	U	S	S	S	U	U	NR	U					
SP1.1	LI	PI	LI	NR	PI	PI	PI	LI	LI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					
SP1.2	PI	PI	PI	NR	LI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					
SP1.3	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	LI	NR					
SP1.4	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	LI	NR					
SP1.5	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	LI	NR					
SP1.6	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	LI	NR					
SP1.7	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	LI	NR					
Specific Goal 2	S	S	U	NR	U	S	S	S	U	S	S	U	S	S	S	U	U	NR	U					
SP2.1	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					
SP2.2	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					
SP2.3	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					
SP2.4	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					
SP2.5	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					
SP2.6	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					
SP2.7	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					
SP2.8	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					
Specific Goal 3	S	S	U	NR	U	S	S	S	U	S	S	U	S	S	S	U	U	NR	U					
SP3.1	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					
SP3.2	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					
SP3.3	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					
SP3.4	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					
SP3.5	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					
Generic Goal 2	S	S	U	NR	U	S	S	S	U	S	S	U	S	S	S	U	U	NR	U					
GP2.1	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					
GP2.2	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					
GP2.3	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					
GP2.4	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					
GP2.5	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					
GP2.6	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					
GP2.7	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					
GP2.8	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					
GP2.9	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					
GP2.10	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					
Generic Goal 3	S	S	U	NR	U	S	S	S	U	S	S	U	S	S	S	U	U	NR	U					
GP3.1	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					
GP3.2	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					
GP3.2	PI	PI	PI	NR	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	PI	NR	NR					

LEGENDS

F Fully Implemented or Satisfied

L Largely Implemented

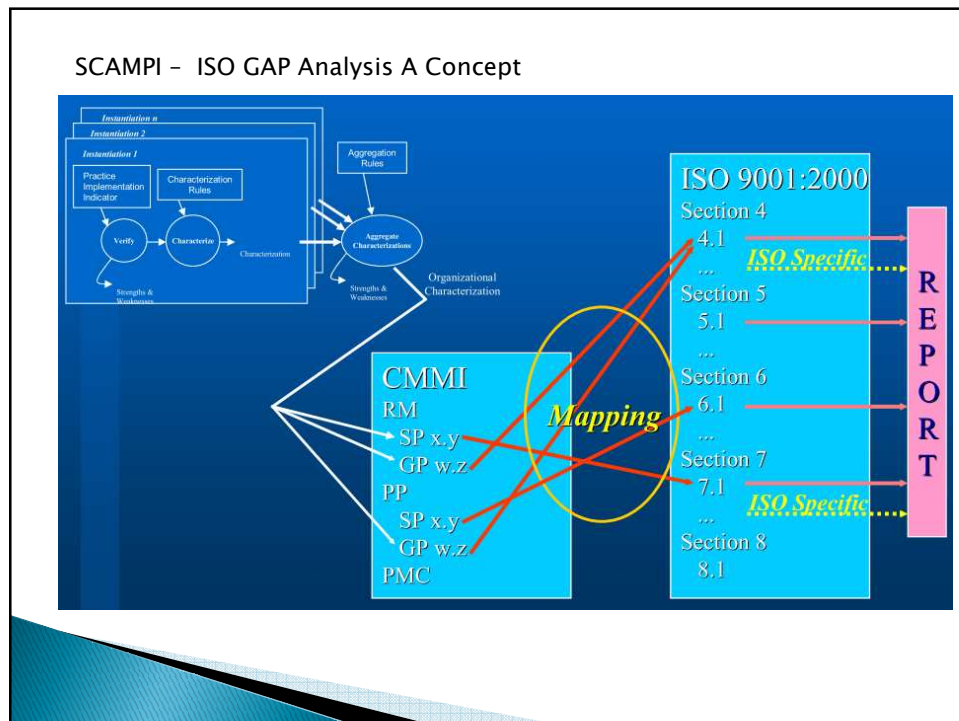
P Partially Implemented

U Unsatisfied (Goals)

NI Not Implemented

NR Not Rated

Not in Process Area



Establishing Phase

- Can divide Generic practices into two groups
 - **Establishing**, that institutionalize processes, e.g.:
 - GP 2.1, *Establish an Organizational Policy*
 - GP 2.2, *Plan the Process*
 - GP 2.3, *Provide Resources*
 - **Invoking**, that implement processes, e.g.:
 - GP 2.5, *Train People*
 - GP 2.6, *Manage Configurations*
 - GP 2.7, *Identify and Involve Relevant Stakeholders*

Establishing Phase (continuation)

- Most Specific Goals can be also categorized as
 - Establishing
 - Invoking
- Some SPs can, therefore, be similarly categorized

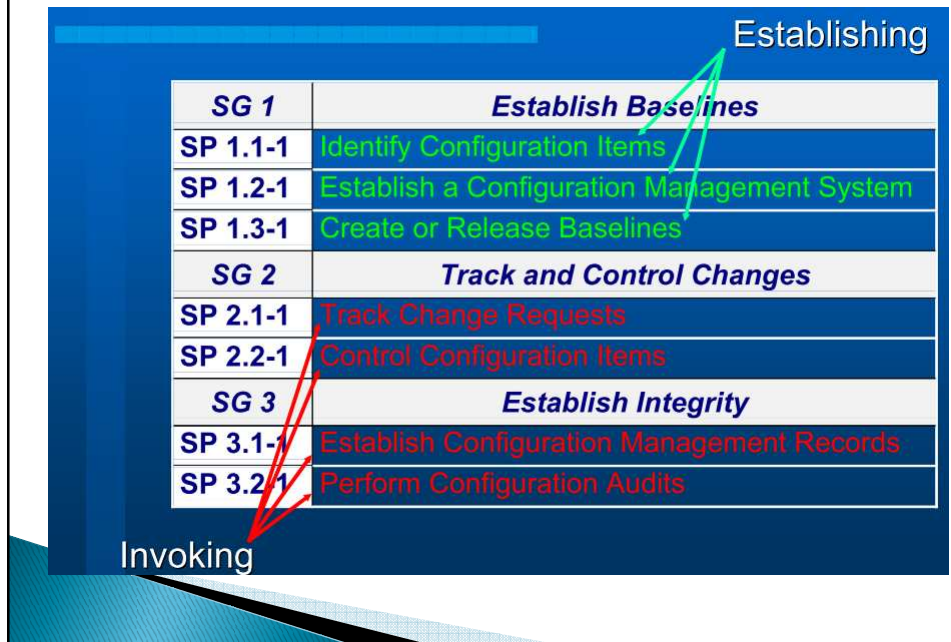
Example – Level 2 CMMI

SG	1							2							3		
SP	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3
REQM	Inv	Inv	Inv	Inv	Inv												
PP	Est	Est	Est	Est				Est	Est	Est	Est	Est	Est	Est	Inv	Inv	Inv
PMC	Inv	Inv	Inv	Inv	Inv	Inv	Inv	Inv	Inv	Inv							
SAM	Est	Inv	Inv					Inv	Inv	Inv	Inv						
MA	Est	Est	Est	Est				Inv	Inv	Inv	Inv						
PPQA	Inv	Inv						Inv	Inv								
CM	Est	Est	Est					Inv	Inv						Inv	Inv	

Example – REQM

SG 1	Manage Requirements
SP 1.1-1	Obtain an Understanding of Requirements
SP 1.2-2	Obtain Commitment to Requirements
SP 1.3-1	Manage Requirements Changes
SP 1.4-2	Maintain Bidirectional Traceability of Requirements
SP 1.5-1	Identify Inconsistencies between Project Work and Requirements

Example - CM



Process Improvement Planning

Planning completes IDEAL Establishing Phase:
- Run process improvement as a project

- Gap Analysis/Appraisal → ● Requirements
- Transitioning steps → ● Life cycle steps

*Need: resources, training, schedule,
control, periodic evaluation*

Sample PIP Outline

1 Introduction

- 1.1 Purpose of this PIP
- 1.2 Corporate goals
- 1.3 Scope

2 Goals

- 2.1 Process Improvement Objectives
- 2.2 Success Criteria
- 2.3 Constraints
- 2.4 Risks

3 Process Improvement Participants

- 3.1 Management
- 3.2 Engineering Process Group
- 3.3 Projects

4 Process Improvement Implementation

- 4.1 PI Tasks
- 4.2 PI Management
 - 4.2.1 Tracking
 - 4.2.2 Measurement
 - 4.2.3 Risk Management
 - 4.2.4 Configuration Management
 - 4.2.5 Quality Methods
 - 4.2.6 Training
- 4.3 Schedule
- 4.4 Resources

A – Acting Phase

- **Implement the Process Improvement Plan**

- **monitor progress**

- **process action teams**
 - deliverables
- **implementation pilots**
- **periodic informal gap analyses**

- **report results**

- **progress visibility**

L – Learning Phase

- **Repeat IDEAL process from Diagnosing phase onwards**
 - adjust improvement approach
 - modify / delete / add transitioning steps
 - create additional PATs (?)
 - change piloting (more/less)
 - re-evaluate process improvement goals
 - re-evaluate resource availability, schedule, management approach, etc.

Summary

- **Process improvement **approach** requires**
 - Problem solving process
 - Framework(s)
- **ISO 9001:2000 and CMMI are synergistic**
 - Used effectively as a “framework”
 - We used CMMI to interpret ISO
- **Process improvement approach depends on the organization’s readiness, culture, maturity**
 - Transitioning from the legacy frameworks