



Painless Transition From SW- CMM Level 2 to CMMI Level 3

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EDS

EIT, Enterprise Processes and Solutions

⋮⋮⋮ Agenda



- Transition Scenario
- Transition Strategies
- Tactical Plan & Timeline
- Lessons Learned

Transition Scenario

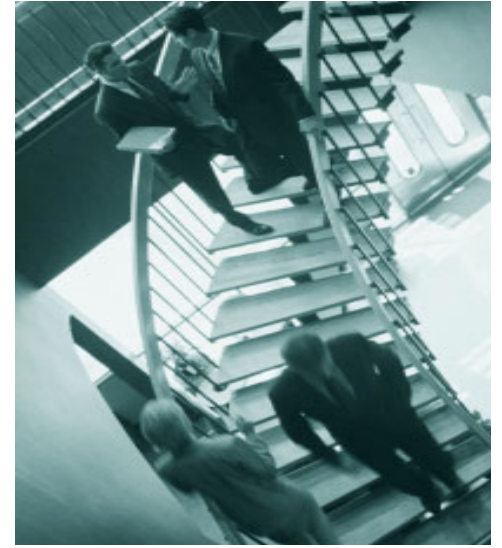
<i>Business Environment</i>	Internal Systems Maintenance of global corporation. Uses off-shore supplier.
<i>Last Assessment</i>	CBA-IPI Maturity Level 2, December 2001
<i>Process Improvement Environment</i>	<ul style="list-style-type: none">• SEPG established. Deploys process assets, provides coaching and mentoring• Projects use a tailored version of an EDS standard process set.• Avid sponsor

∴∴ Transition Issues and Resolution -1

<i>Issue</i>	<i>Resolution</i>
Next milestone Level 3. Sponsor does not want to move the date.	<ul style="list-style-type: none">• Standard process set will support CMMI practices with 2002 2Q and 3Q releases.• Address weaknesses identified in SW-CMM CBA-IPI using CMMI.
Move to Level 3 greater in CMMI	<ul style="list-style-type: none">• Map existing processes and practices to CMMI• Conduct a series of Mentored Self Assessments using the Continuous Representation to learn the model and identify major gaps.

∴∴ Transition Issues and Resolution -2

<i>Issue</i>	<i>Resolution</i>
What model/representation to use?	<ul style="list-style-type: none">• Use a combined approach of SE/SW: Continuous to grow capability in weak areas identified in assessments; Staged for long term milestones.



Transition Strategies

∴∴ Transition Strategies (Categories)

- Manage Change
- Introduce New Technology
- Identify and Address Gaps
- Monitor Progress
- Reassess

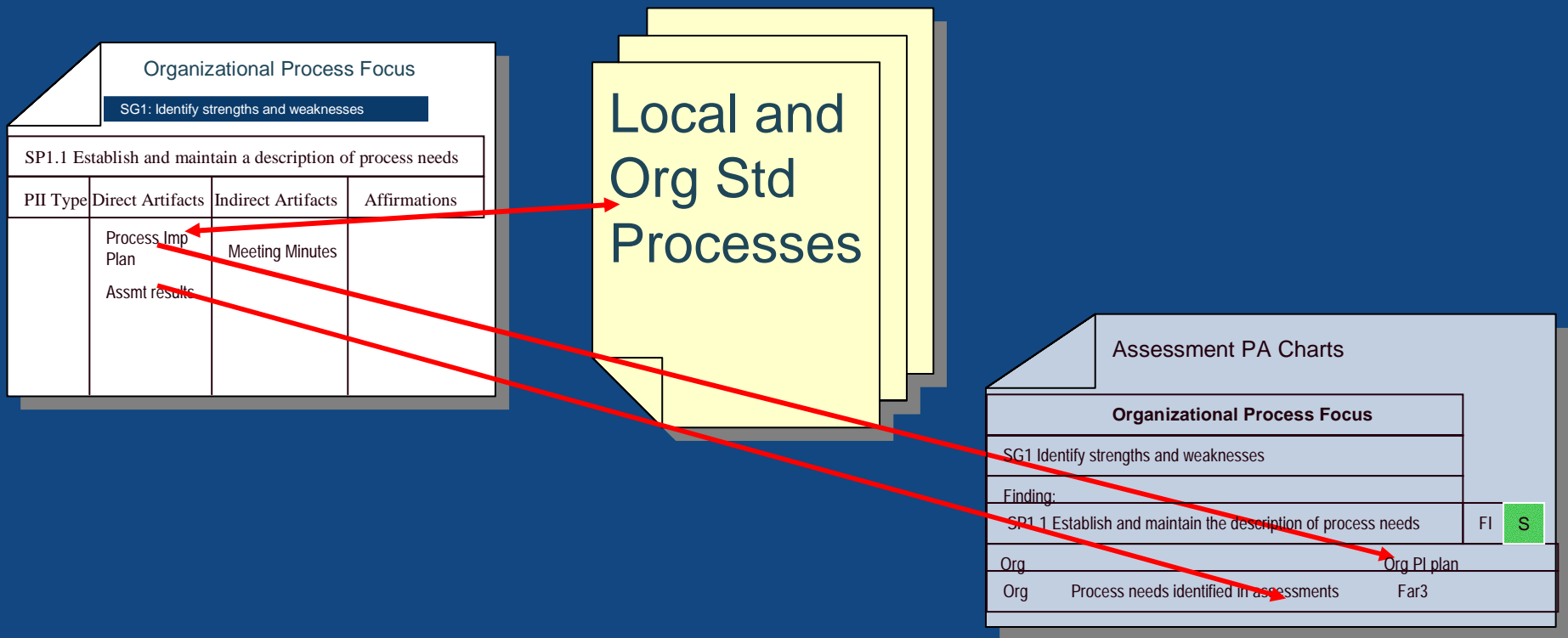
∴∴ Manage Change - 1

- Generate awareness at all levels of the organization
 - CMMI Training for the SEPG
 - Presentation to Leadership
 - Benefits and necessity to map benefits to business goals
 - Major differences between SW-CMM and CMMI
 - Business drivers for CMMI
 - EDS support
 - SEPG communicates to the organization through meetings, newsletters, website.

☼☼ Manage Change - 2

- Transition decision
 - Early adopter
 - Business benefits realized from SW-CMM implementation
 - Client performance and CMMI objectives
 - 2003 Milestones

✪✪ Mapping Processes to CMMI



∴∴∴ Introduce New Technology (CMMIsm)

- Map processes and practices to CMMIsm
 - Completed Practice Implementation Indicator Documents (PIIDs) i.e., CMMIsm-based document reference sheets.
 - Conducted a series of 3 EDS Mentored Self Assessments
 - Primary objective is to learn
 - Small core team is trained in the model and to perform analysis
 - Lead Assessor plans and conducts the assessment
 - Implementation data is collected via document review and group input (project managers, developers and support functions and middle managers)

Introduce New Technology (CMMIsm) -2

- Scope of Each Mentored Self Assessment (MSA):

MSA	CMMI sm SCOPE
1	<ul style="list-style-type: none">• Level 3 Process Management PAs• Measurement and Analysis• Process and Product Quality Assurance• Supplier Agreement Management
2	<ul style="list-style-type: none">• Project Management Process Areas (primary focus on Level 3)
3	<ul style="list-style-type: none">• Engineering Process Areas• Configuration Management• Decision Analysis and Resolution

∴ Identify and Address Gaps

- Mentored Self Assessment Findings
- Action Planning
 - Involved core team members to take advantage of their insight gleaned from analyzing the data
 - Involved SEPG members depending on PAs being addressed
 - Facilitated sessions (used various techniques such as root cause analysis, fish bone diagrams, and “cards on the wall”)
 - Large scope solutions planned and managed as projects. Smaller scope solutions documented as Change Requests and assigned to individuals.

⋮ Action Planning Example

Process Area	Weakness or Improvement Opp	Short description of How the Weakness/Opp will be addressed	Associated Process or Local	GSMS/ Process Status
Project Monitoring and Control	SG1: Actuals are tracked against the parameters estimated for CRs. Actuals are not tracked against the parameters estimated in the project Estimate Package.		Same as Project Planning	
	SG1: Critical stakeholder dependencies are not identified and monitored in the schedule.	On CRs over 60 hrs, require project teams to identify and document stakeholders and update the project schedule to document the critical dependencies (schedule and/or cost) of the stakeholder. Project Mgrs will monitor the dependencies in the schedule an	Project-level CR Processes	Local
			Manage Project Results	GSMS
	SG2: Issues identified by monitoring project performance are analyzed to determine corrective actions. Corrective actions are documented and taken to address issues associated with the release and CRs. Corrective actions are not always taken to address	Same as below...		
	SG2: Although corrective actions are generally tracked to closure, the effectiveness of the corrective actions is not always monitored.	Create an Analysis Procedure. The Analysis Procedure must include a review of the results of corrective action to determine if the problem has recurred and determine the effectiveness of the corrective actions.	Analysis Process/Procedure (New)	



Realign Process Improvement Objectives to Business Goals

- Strategy added later
- Primarily driven by solutions to gaps in Measurement and Analysis
 - A lot of data collected
 - Measurement objectives not clear, and always aligned to business goals
 - Used SEI Goal-Driven Software Measurement

Monitor Progress

- Analysis of process measurement data
- QA audit results
- Process Action Team status reports

Reassess

- EDS Mini-Assessment targeted in April 2003.
Scope: Level 2 and Level 3 PAs of SE/SW
CMMIsm, (Staged Representation)
- SCAMPI in 3Q

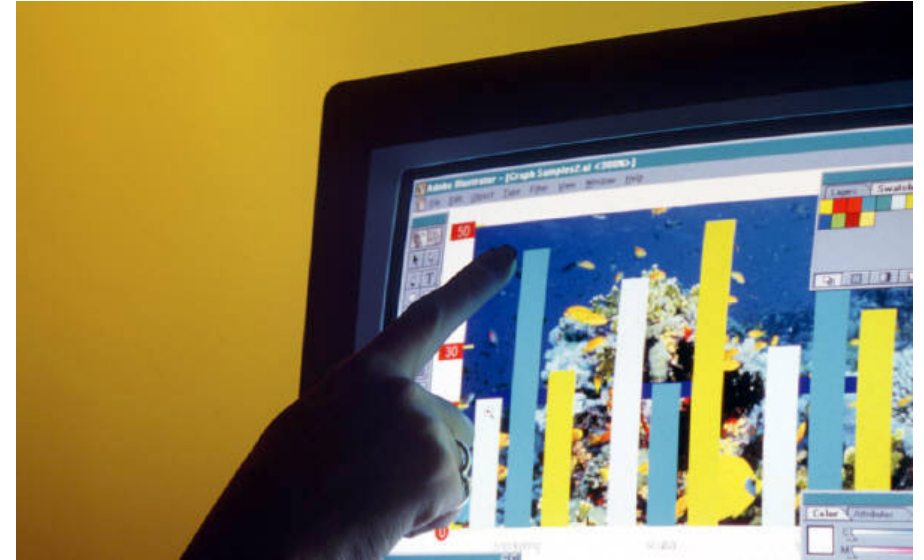
∴∴ EDS Mini-Assessment

- Based on ARC Class B requirements
- Organization maintains PIIDs. Assessment team uses to perform document review and develop data gathering strategy
- Assessment team comprised of internal and external team members. In experienced team members receive model and method training
- Process:
 - Initial data gathered in Pre-onsite using PIIDs.
 - Determine Onsite data gathering strategies (discovery vs. validation)
 - Gather data in interviews and document reviews
 - Analyze data
 - Prepare and present findings

Timeline



too close together!



⋮ Tactical Plan

⋮⋮ Tactical Plan -1

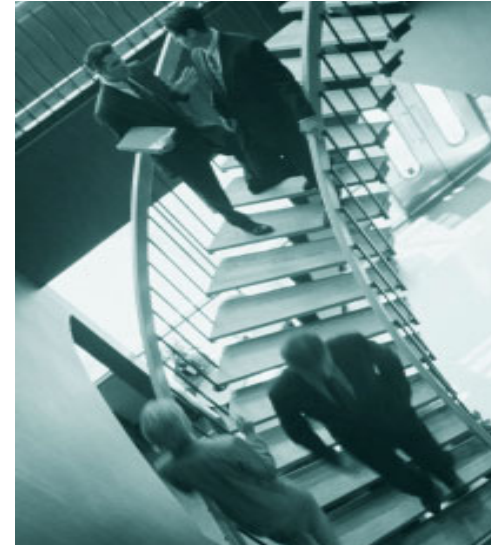
- Provide CMMI training to the SEPG
- Meet with Leadership to
 - Identify benefits of transitioning to CMMI
 - Obtain decision to transition
- Complete action planning to address weaknesses from CBA-IPI using CMMI Level 2 Process Areas
- Deploy improvements
- Conduct first MSA (Process Management)
- Complete action planning (facilitated session) to address weaknesses in Process Management

⋮⋮ Tactical Plan -2

- Conduct 2nd MSA (Project Management)
- Conduct 3rd MSA (Engineering)
- Complete action planning for Project Management and Engineering weaknesses.
- Realign process improvement objectives and measurement objectives to business goals
- Deploy local process improvements and next release of standard process set.
- Monitor progress (QA audits, measurement data)

⋮⋮ Tactical Plan -3

- Conduct EDS Mini-Assessment (CMMI Level 2 and Level 3)
- Complete action planning
- Deploy improvements
- Monitor progress (QA audits, measurement data)
- Conduct SCAMPI (CMMI Level 2 and Level 3)



Lessons Learned

❖❖❖ Lessons Learned

<i>Strategy</i>	<i>Lessons Learned</i>
<i>Manage Change</i>	Identify and evaluate risks to the transition due to other initiatives and imperatives when setting milestones
<i>Introduction of New Technology</i>	<ul style="list-style-type: none">• Conducting a series of MSAs is more manageable• Using a core team of individuals representing the functions involved in each assessment enabled more in-depth learning than using only assessors outside the organization• Schedule MSAs to allow more time for planning improvements

❖❖❖ Lessons Learned

<i>Strategy</i>	<i>Lessons Learned</i>
<i>Identify and Address Gaps</i>	<ul style="list-style-type: none">• Use of core team and other appropriate individuals in each action planning session was valuable in analyzing the assessment results, identifying solutions to the gaps, and prioritizing improvements
<i>Realign with Business Goals</i>	<ul style="list-style-type: none">• Be prepared to plan for this strategy if measurement objectives and process improvement initiatives do not currently align with business goals.

❖❖❖ Lessons Learned

<i>Strategy</i>	<i>Lessons Learned</i>
<i>Monitor Progress</i>	<ul style="list-style-type: none">• Use QA audit results and analysis results of measurement data to determine readiness for next assessment
<i>Reassess</i>	<ul style="list-style-type: none">• Using an assessment strategy to apply new model components fosters organizational learning• Perform a readiness review of the PIIDs at least a week before the assessment

Summary Points

- Learn about the model first
- Involve leadership in linking transition decision to business objectives
- Involve as much of the organization as you can in the transition
 - Communicate the change, and why it is important to the organization
 - Involve them in
 - Assessments
 - Learning opportunities
 - Action Planning

References

- Managing Technological Change, SEI course
- IDEALsm: A User's Guide for Software Process Improvement, Bob McFeeley, CMU/SEI-96-HB-001
- Goal-Driven Software Measurement – A Guidebook, Park, Goethert, Florac, CMU/SEI-96-HB002



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