

Going from Level 3 to Level 5: Lessons Learned

AVISTA

People. Process. Promise.

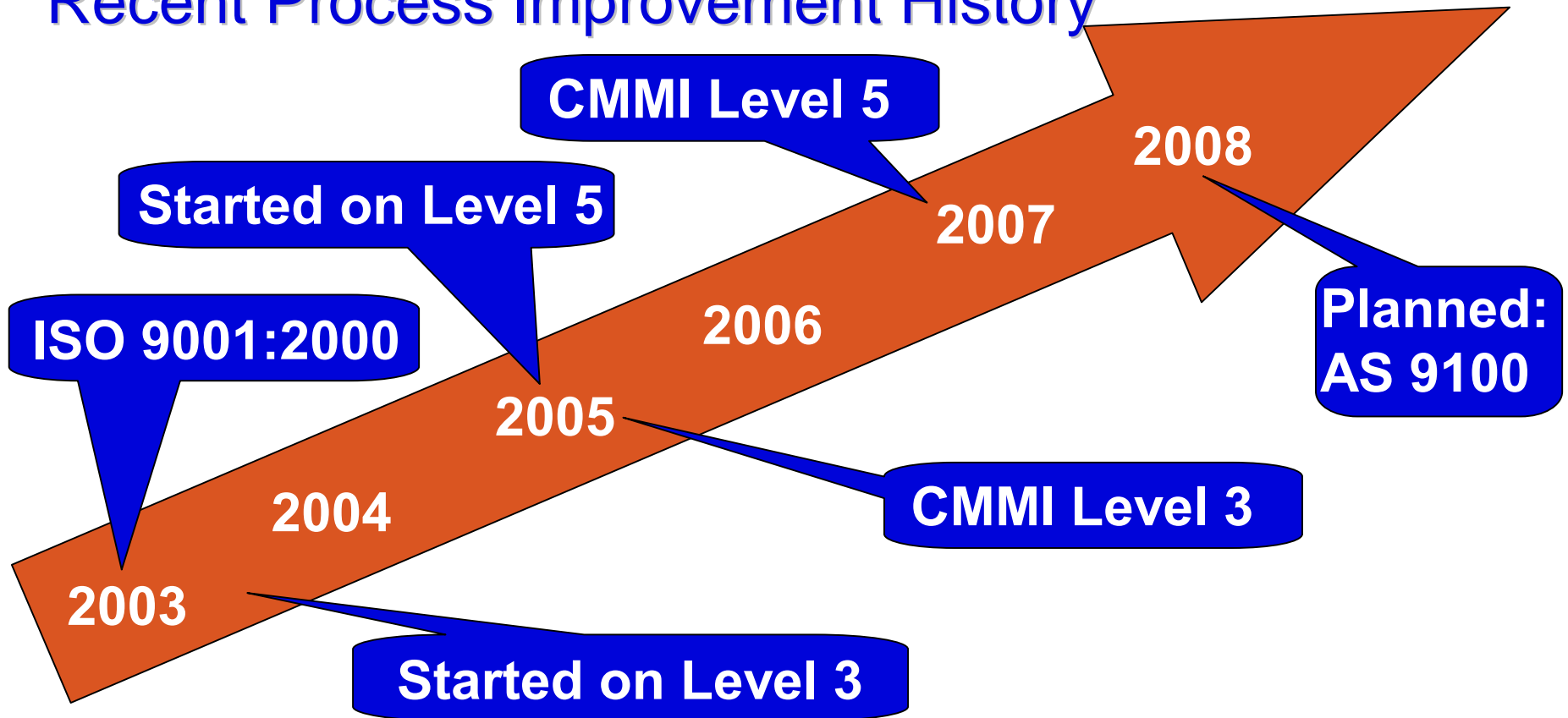
CMMI[®] Technology Conference
November 12-15, 2007



- » AVISTA's Journey
- » Lessons Learned
 - » Planning
 - » Measurement
 - » Process Implementation
 - » Training
- » Other Tips
- » Summary
- » Q & A

AVISTA's Journey

Recent Process Improvement History



ourney

- » Safety-Critical Software Engineering Services Provider;
Specialization in:
 - » DO-178B
 - » FDA 510(k)
- » CMMI Timeline
 - » Started Level 3 Planning in Spring 2003
 - » Achieved Level 3 in Spring 2005
 - » Started Level 5 Planning in Spring 2005
 - » Achieved Level 5 Assessment in July 2007
- » Selected Multiple Full Lifecycle Projects Supplemented with
Projects Performing Only Specific Lifecycle Activities
- » Created New Review, Problem Reporting, and Tracking Tools



Learned

- » Planning
 - » Manage Effort Like a Real Project Because It Is!
 - » Be Innovative
 - » Manage Risks
- » Measurement
 - » Create an Organized Approach to Metrics Definition
 - » Involve Representatives from All Functional Roles
 - » Generate and Review New Tool Requirements
- » Process Implementation
 - » Careful Process Definition and Preparation for Major Change
- » Training
 - » Define Training Requirements, Training Plan, and Timeline



	% of Schedule	February 05	March 05	April 05	May 05	June 05	July 05	August 05	September 05	October 05	November 05	December 05	January 06	February 06	March 06	April 06	May 06	June 06	July 06	August 06	September 06	October 06	November 06	December 06	January 07	February 07	March 07	April 07	May 07	June 07	July 07		
Achieved Level 3		X																															
Process Def./Implementation	40%																																
Informal Gap Analysis									X																								
Metrics Definition	14%																																
Informal Gap Analysis														X																			
Tool Implementation	22%																																
Organizational Mapping	5%																																
Gap Analysis																																	
Project Mapping	10%																																
Optimization	9%																																
Readiness Review																																	
SCAMPI A (Achieved Level 5)																																	



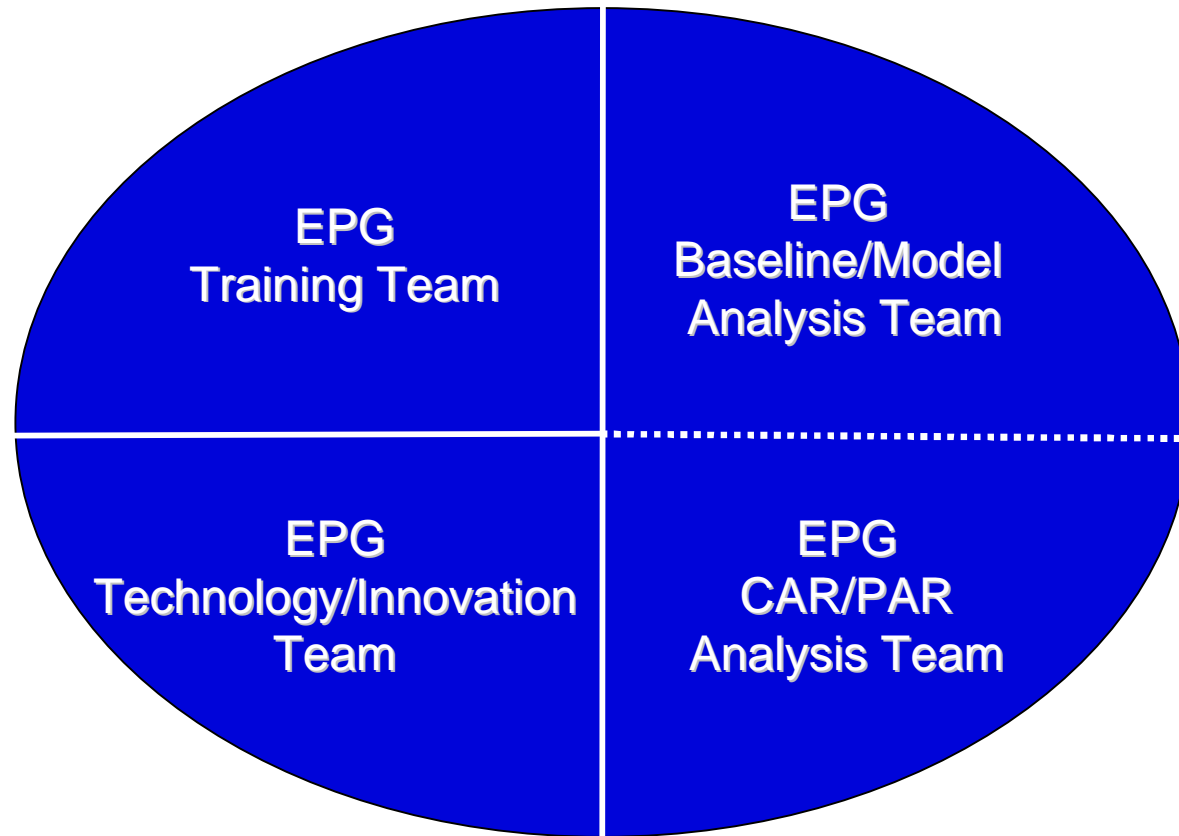
Manage it Like a Project

- » Perform Occasional Gap Analyses
- » Plan Thoroughly
 - » Define Scope
 - » Coordinate/Communicate with Stakeholders
 - » Determine Schedule and Budget
 - » Manage Risks
 - » Report Status



- » Be Innovative
 - » Carefully Select Projects for Appraisal
 - » Risk Mitigation: Select a minimum two full-lifecycle projects with evidence of all lifecycle activities
 - » AVISTA[®] Projects: 3 full-lifecycle projects and 2 projects performing only specific lifecycle activities
- » Real World Issue: Two projects selected for appraisal were put on hold
- » Communicate, Communicate, Communicate
- » Expand/Reorganize Engineering Process Group

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Level 5 Engineering Process Group



- » Critical Shift From Proactive to Predictive Management
- » Metrics Identification and Definition is One of the Most Challenging Aspects of the Process:
 - » Create an organized approach
 - » Invest the time
 - » Define details carefully
 - » Be prepared for turmoil
 - » Be prepared to redefine metrics
- » Review Tool Requirements
 - » In-house resources, off-the-shelf, homegrown

ent (cont.)

- » Real World Issue: New review and problem reporting tools needed to consistently and accurately measure defects
- » Real World Issue: Limit the scope when rolling out new tools, immature tools will negatively impact acceptance



plementation

New Process Definition

- » Root Cause Analysis Guideline
- » Statistical Techniques Guideline
- » Baseline and Models Management Work Instruction
- » Pilot and Deployment Work Instruction
- » Project Status Tracking and Reporting Work Instruction
- » Quality and Process Performance Goals
- » Quantitative Project Management (QPM) Plan

plementation (cont.)

Enhanced the Following Processes and Documents:

- » Data Analysis Process
- » Change Request and Data Item Review Process
- » Project Measures Definitions
- » Corrective Action, Preventive Action, and Process Improvement Processes
- » Technical Proposal/Basis of Estimate/Project Plan
- » Project Management Review Process



Establish a Solid Training System Early

- » Real World Issue: Don't train employees too far in advance of when they will utilize the training
- » Conduct Evaluations and Monitor Effectiveness
- » Establish a Tracking System (who, what and when)
- » Capture Training for New Employees/Future Reference
- » Update Training/Materials as Process Changes

Appraisal Tips

- » Select the Right Lead Appraiser for Your Company
- » Carefully Select Projects for the Appraisal
- » Ensure Appraisal Team Members are Dedicated Resources
- » Set Project Priorities and Enforce Them
- » Secure Executive Sponsorship
- » Select Appraisal Team with Necessary Skills
 - » Communications
 - » Statistics
 - » Detail-oriented
 - » Compatible personalities
 - » Knowledge of the process



- » Manage Effort Like a Full Project; Plan Well
- » Define Measures in Detail
- » Consider the Timeline
- » Be Prepared for Schedule Changes- Delays are Common
- » Establish a Training System Early; Don't Train Too Early
- » Confer Regularly with Your Lead Appraiser



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