Going from Level 3 to Level 5: Lessons Learned

AVISTA

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

- **2003**: ISO 9001:2000
- **2004**: Started on Level 3
- **2005**: CMMI Level 3
- **2006**: CMMI Level 5
- **2007**: Started on Level 5
- **2008**: Planned: AS 9100
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
Lessons 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
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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
» AVISTAâ'® 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
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
Measurement (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
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
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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