A Business Case Approach for Process Improvement

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Agenda

• Definitions
• Challenges of process improvement
• Process Improvement Process
• Business Case for Process Improvement
• Conclusions
Definitions

• Process Improvement
  – Project/Organizational objective of continually improving project performance, based upon defined goals
  – Goals include: Quality, Productivity, CMM rating, etc.

• Performance Catalysts
  – Means by which process improvement occurs
Challenges Of Process Improvement

• Looking for the ‘silver bullet’
• Chasing after buzzwords
• Many initiatives fail
  – Not enough time
  – Not enough commitment
  – Not planned or budgeted correctly
• Pilots may work, but roll-out is difficult
What’s the Underlying Problem?

• Process Improvement activities are projects!
  – Identical to engineering or production projects

• Must have same attributes
  – Plans
  – Follow-up on Execution
  – Trade-offs and Risk Mitigation
  – PROCESS!!
What’s the Underlying Problem?

• Process Improvement must be managed
  – Steps to follow
  – Milestones for decisions

• Lack of a Business Case approach
  – Why are you doing process improvement?
  – What will it cost?
  – What is the benefit?
Process Improvement

Entry Criteria

Select Project and Catalyst

Plan Catalyst Introduction

Conduct Pilot Project

Conduct another pilot

Evaluate Results

Make Recommendations

Reject Catalyst

Adopt for full institutionalization
Business Case for Process Improvement
Step 1: Select Project and Catalyst

- Two numbers that matter for any Catalyst: Cost of Entry and Return on Investment
  - Cost of Entry = Cost of Introduction + Cost of Support + Cost with Catalyst Usage
  - Return on Investment = Catalyst Benefit / (Cost of Introduction + Cost of Support)

- One must estimate these numbers for each Catalyst to select the one(s) to try
Step 1: Select Project and Catalyst

• Refinement of terms
  – Cost of Introduction = Cost of Training + Cost of Acquisition + Cost of Installation + Cost of Learning Curve
  – Cost of Support = Cost of Availability + Cost of Learning Curve Mitigation (coaching) + Cost of Maintenance
Step 1: Select Project and Catalyst

- Refinement of terms
  - Catalyst Benefit = Efficiency Savings + Quality Savings + Risk Savings
    - Efficiency Savings = Cost of Usage of Previous Process - (Estimated) Cost with Catalyst Usage
    - Quality Savings = direct and indirect benefits due to higher quality
    - Risk = Probability of Risk Occurring * Cost of Risk Occurrence
Step 2: Plan Catalyst Introduction

• After selecting Catalyst, create catalyst introduction plan
  – Goal
  – Pilot Scope
  – Catalyst to be Introduced
  – Catalyst Support
  – Measures of Effectiveness
  – Budget
  – Schedule
  – Risks and Mitigations
Step 3: Conduct Project

• Tools
• Training
• Coaching
• Reference Material
• Measure Usage of Catalyst
• Discussions with project staff
Step 4: Evaluate Results

- Analyze Data
- Measure actual ROI
- Measure actual Cost of Entry
- Capture Qualitative Information
Step 5: Make Recommendations

• Select one of the following options
  – Conduct additional pilots to ensure repeatability, or to address open issues
  – Define an approach for full institutionalization of the catalyst
  – Reject the catalyst as being ineffective for the organization
Results from using this approach on the IMBC Project

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<th>Inc 1</th>
<th>Inc 2</th>
<th>Inc 3</th>
<th>Inc 4</th>
<th>Inc 5</th>
<th>Inc 6</th>
<th>Inc 7</th>
<th>FQT</th>
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<td>Expected cost with old Process (SM)</td>
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<td>182.3</td>
<td>236.2</td>
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<td>413.4</td>
<td>617</td>
<td>745.1</td>
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<td>Cost of Introduction and Support (SM)</td>
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* does not include cost of rework (effort to correct failures that would have been found) during FQT using old process
Conclusions

• Attributes
  – Process can be applied for any catalyst (technology, process, etc.)
  – Helps manage process change
  – Provides objective data for decision maker

• Process has been applied at Picatinny
  – Introduced Cleanroom Software Engineering
  – ROI of over 20 to 1