Measurement & Analysis for the Acquirer

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Goals for Presentation

- How to approach developing an acquirer measurement system

- How to relate supplier measures to acquirer measures

- Sample acquirer measures

- Sample collection approaches

- Ways to communicate measurement results to stakeholders

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Need for Measurement

- Acquirer status – how am I doing on my activities?
- Supplier status – how is the supplier doing in relation to their commitments in the contract?
- How is the product doing as it evolves?

- Specific Drivers for Measurement
  - Project objectives
  - Organizational objectives
  - Business Needs

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Measurement Program

- Align measurement activities
  - Know objectives (What are we measuring and why)
  - Relate measures to defined objectives
  - Determine how to collect and manage data
  - Determine what analysis is required
- Provide results – make it visible
  - Collect
  - Analyze
  - Store
  - Communicate…..Communicate…..Communicate…

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Examples of Goals/Objectives to Measure

- Reduce time to delivery

- Reduce total lifecycle cost

- Deliver specified functionality completely

- Improve prior levels of quality

- Improve prior customer satisfaction ratings

- Maintain and improve the acquirer/supplier relationships

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Measures Needed at Multiple Management Levels

- **Measures focused on project level**
  - Useful to project teams and project manager

- **Programs also need measures**
  - Cross-project trends, program performance
  - Information to answer questions of the business about quality, dependencies, delivery milestones, etc.

- **Executives need measures of business performance**
  - Across the portfolio (financial, schedule, customer satisfaction)
  - Internal measures of process compliance and resource alignment to match needs

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Example – Measures for an Acquirer to Use

Acquirer Work

- ## Schedule:
  - Milestones & Deliverables

- ## Effort:
  - Hours at Activity Level

- ## Cost:
  - Project/Program/Portfolio

- ## Quality:

  - First-Time Deliverable Acceptance
  - Customer Satisfaction Survey

- ## Stability & Size:
  - Business Requirements Volatility
  - System Requirements Volatility

Supplier Work

- ## Schedule:
  - Contractual Milestones & Deliverables

- ## Effort:
  - Earned Value

- ## Quality:
  - Supplier Deliverable Acceptance
  - Pre Production Testing Quality (System Integration Testing - SIT, UAT)
  - Post Production Testing Quality (Warranty)
  - Defect Density (SIT, UAT, Warranty)
  - Supplier Report Card
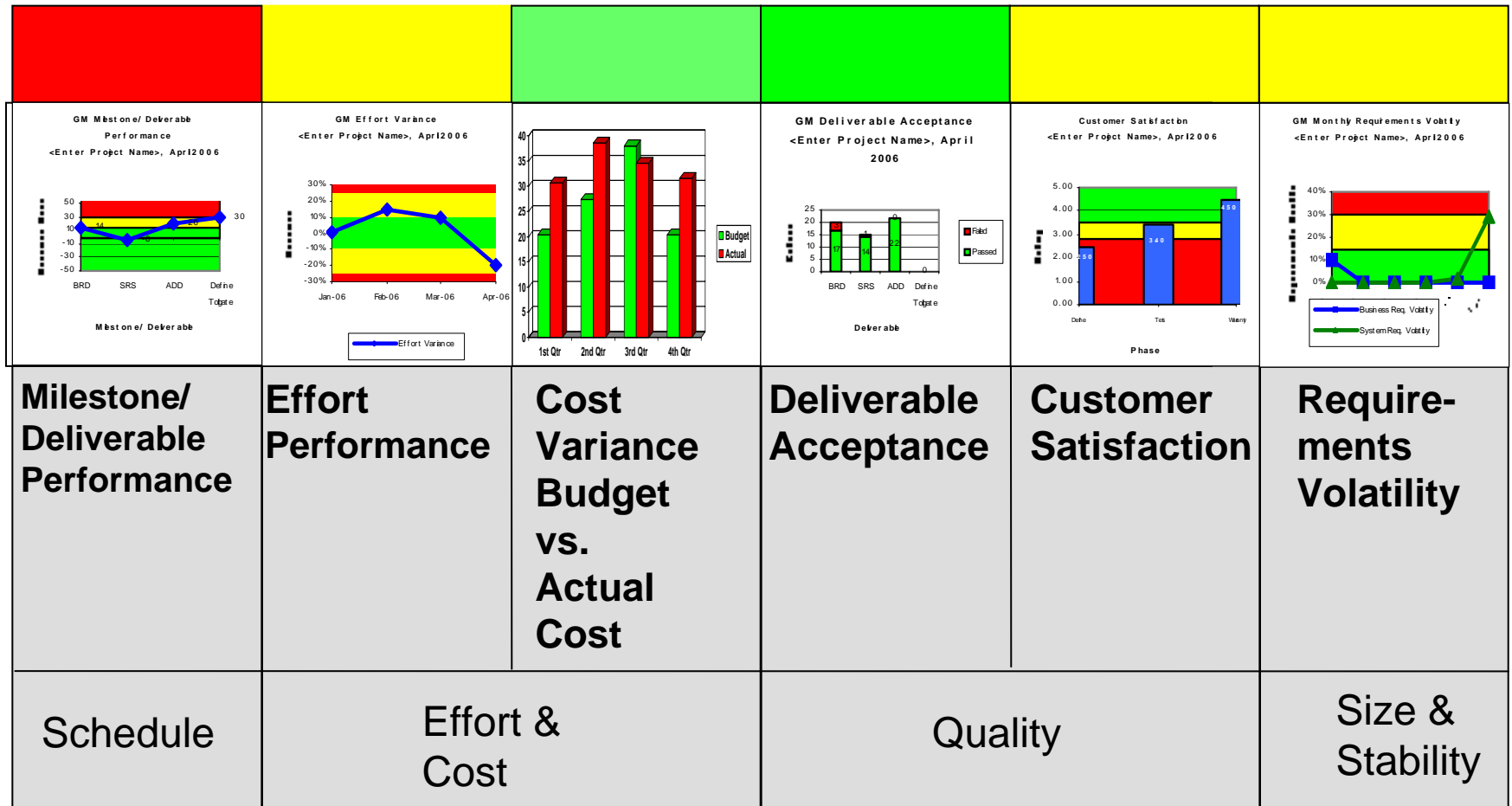
- ## Size:
  - LOC (to support Defect Density)

CMMI for Acquisition, Version 1.2

Example Measurement Objectives	Measurement Information Categories	Example Base Measures	Example Derived Measures
Shorter Time to Delivery	Schedule and Progress	Estimated and Actual Start and End Dates by Task Estimated and Actual Start and End Dates of Acquisition Tasks	Milestone Performance Percentage of Project on Time Schedule Estimation Accuracy
Reduced Total Lifecycle Cost	Effort and Cost	Estimated and Actual Effort Hours	Return on Investment
		Estimated and Actual Cost	Cost Variance

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CMMI for Acquisition, Version 1.2 con't

Example Measurement Objectives	Measurement Information Categories	Example Base Measures	Example Derived Measures
Deliver Specified Functionality Completely	Size and Stability	Requirements Count	Requirements Volatility Size Estimation Accuracy
		Function Point Count	Estimated and Actual Function Points Completed
		Lines of Code Count	Amount of New, Modified, and Reused Code
Improve Levels of Quality	Quality	Product Defects Count	Defect Removal Efficiency Number of Defects Per Phase Total Unresolved Defects
		Customer Satisfaction Survey Scores	Customer Satisfaction Trends
		Supplier Performance and Relationship Scores	Supplier Performance and Relationship Trends
		Web Site Response Time	Variance from Throughput Target

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Example Project "Dashboard"
For Acquirer Work

Milestone/ Deliverable Performance	Effort Performance	Cost Variance Budget vs. Actual Cost	Deliverable Acceptance	Customer Satisfaction	Require- ments Volatility
Schedule	Effort & Cost		Quality		Size & Stability

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Example Project "Dashboard"
For Supplier Work

Supplier Milestone/ Deliverable Performance	Supplier Earned Value Performance	Supplier Deliverable Acceptance	Supplier First Time Quality: Pre & Post Prod	Supplier Report Card
Schedule	Effort & Cost	Quality		

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Acquirer Schedule Variance

Milestones and Deliverables	Original Date	Rebaseline Date	Forecast Date	Actual Date	Variance
Bus Requirements Doc	1/1/2006			1/5/2006	4
Systems Req Spec	2/1/2006		01/20/06	1/20/2006	11
Arch Design Document	3/1/2006			3/5/2006	4
Define Phase Tollgate	4/1/2006			4/20/2006	19

Key Assumptions:

- Milestones and Deliverables have been defined by the PM Work stream to support this measure
- Measure will be collected monthly
- The thresholds for red/yellow/green are aligned with business objectives

Purpose (Measurement Objective)

Monitor Acquirer's ability to meet its Milestone and Deliverable commitments.

Target Limits

Green: < or = 14 days
Yellow: 15-28 days
Red: > or =28 days

Measures Collected by Acquirer

- Milestones
- Deliverables
- Baseline Date
- Forecast Date
- Actual Date

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Collection, Analysis, Reporting

- ## Collection
  - Can use a simple spreadsheet or a more structured project tracking system
  - Define milestones, deliverables and dates; capture data using a specified cycle

- ## Analysis
  - Chart the data to do relevant comparisons

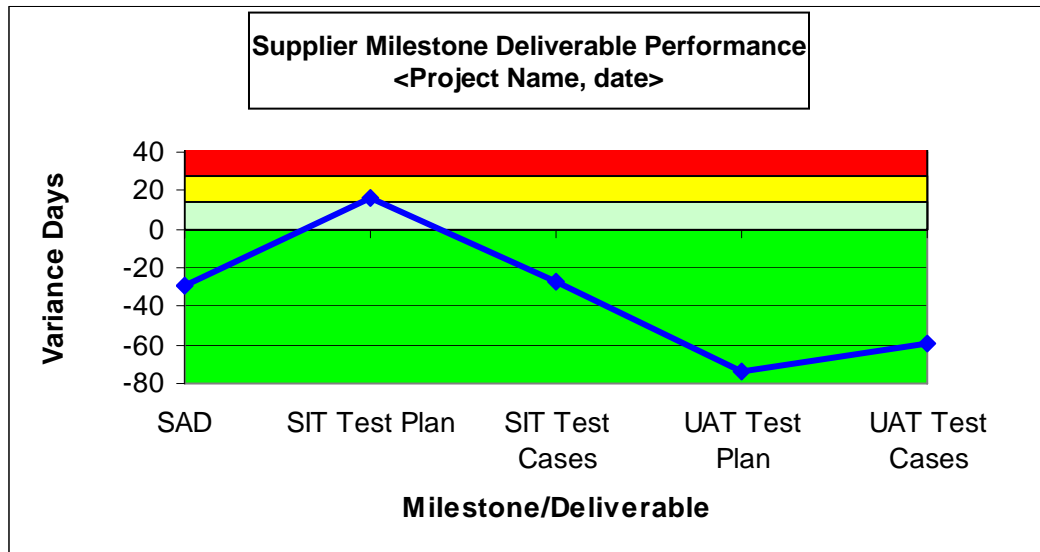- ## Reporting
  - Communicate through simple spreadsheet, PowerPoint slides, or project management tool

Challenges:
- Establishing baselines
- Re-baselining

Supplier Milestone/Deliverable Performance

Supplier Milestone Deliverable Performance
<Project Name, date>

Key Assumptions:

- **These are Contractual Milestones and Deliverables**
- **These Milestones and Deliverables may be entered into a tool for tracking**

Purpose (Measurement Objective)

Monitor and understand Supplier's ability to deliver as agreed to in the contract.

Target Limits

Green: < or = 14 days
Yellow: 15-28 days
Red: > or =28 days

Measures collected by Acquirer

- Supplier Contractual Milestones
- Supplier Contractual Deliverables
- Baseline (Due Date)
- Forecast Date
- Actual (Approval) Date

Collection, Analysis, Reporting

- ## Collection
  - From simple spreadsheet to project management tool; input and track supplier committed deliverables, milestones by baseline, forecast and actual for completion

- ## Analysis
  - Compare baseline, forecast and actual data around specific delivery
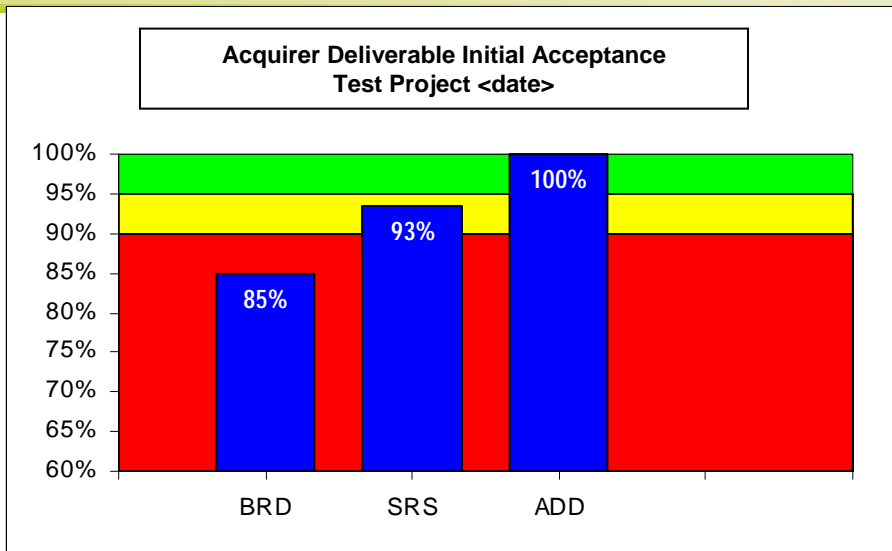
- ## Reporting
  - Communicate through simple spreadsheet, PowerPoint slide or reporting from project management tool

Challenges:
•Managing baselines and re-baselines in context of contract

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Acquirer Deliverable Acceptance

Acquirer Deliverable Initial Acceptance Test Project <date>

	BRD	SRS	ADD
	85%	93%	100%

(Y-axis: 60% to 100% in 5% increments)

Key Assumptions:

- A set of Supplier and Acquirer deliverables will be defined which have associated acceptance criteria.

Purpose (Measurement Objective)

Understand the deliverable acceptance (or First Time Quality) provided from Acquirer. Acceptance of deliverables is an indicator of potential defects in the final software product.

Target Limits

Green: > or =95%
Yellow: 90% - 94%
Red: < 90%

Measures Collected from Acquirer

- Total Acceptance Criteria Reviewed for Deliverable
- Total Acceptance Criteria Failed for Deliverable

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Collection, Analysis, Reporting

- ## Collection
  - Leverage standard template to capture acceptance criteria for evaluation; can be simple pass/fail. Capture can be done in a simple spreadsheet or a more structured project management tool

- ## Analysis
  - Analyze the progress of work completion, based on acceptance criteria. Review acceptance criteria not met to determine why, and identify any patterns that emerge.

- ## Reporting
  - Communicate through simple spreadsheet, PowerPoint slide or acceptance criteria template.

Challenges:
- Clarity around acceptance criteria
- Communication as to what is behind the measure

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Customer Satisfaction Rating

**Customer Satisfaction
Test Project, <date>**
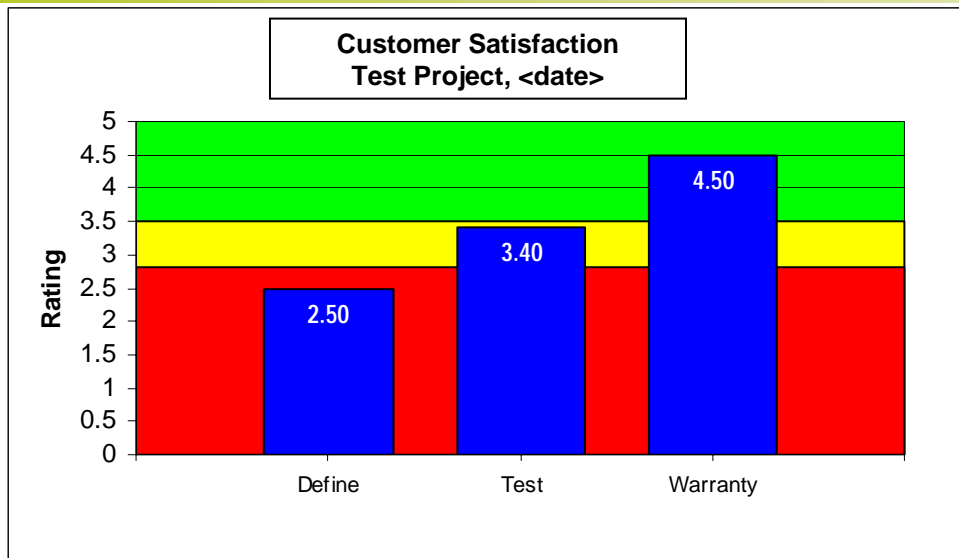
Key Assumptions:

- Ratings, frequency, target limits and scope based on plan.

Purpose (Measurement Objective)

To understand Customer's level of satisfaction with the services and products delivered by Acquirer. Results of Customers Satisfaction Survey will be used to identify ongoing process and product improvements.

Measures Collected By Acquirer

- Final Rating for each Survey

Targets

Green: > 3.5
Yellow: 2.75 – 3.5
Red: 0 to 2.75

Collection, Analysis, Reporting

- **Collection**
  - Focus on areas of customer involvement, e.g., customer requirements solicitation, UAT, and post deployment feedback
  - Capture feedback using questionnaires at the completion of each activity
- **Analysis**
  - Analyze customer ratings based on whatever established scale was used and compare against other projects/deployments.
- **Reporting**
  - Communicate through simple spreadsheet, PowerPoint slide

Challenges:
- Possible subjectivity based on when survey is taken
- Need to select consistent population for project to project comparisons

Supplier Report Card

Supplier Performance on Project X
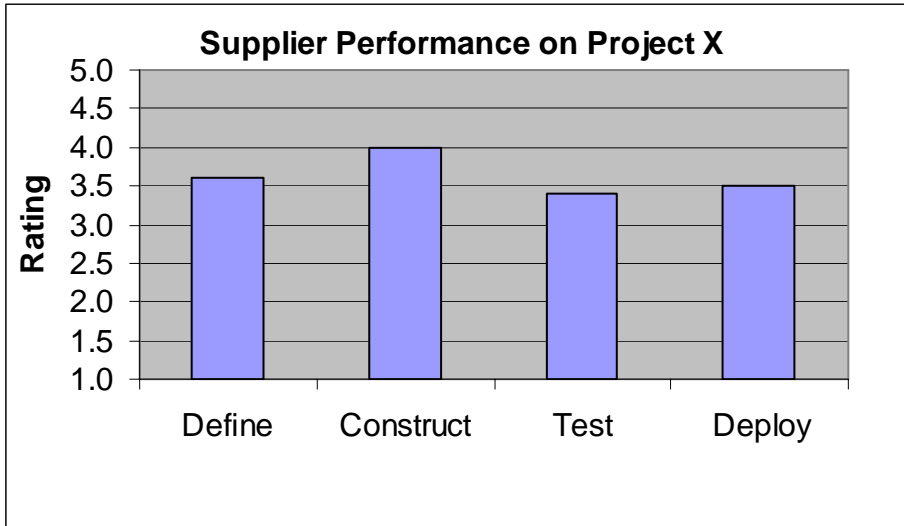
Key Assumptions:

- Ratings, frequency, target limits and scope of projects based on SDP

Purpose (Measurement Objective)

Monitor and analyze Supplier Performance based on multiple dimensions such as quality, schedule, cost, etc. This is a subjective measure and could be an indicator of the Acquirer/Supplier relationship.

Measures Collected By Acquirer

- Final rating for key Supplier.

Evaluation Targets

Excellent: 3-5
Satisfactory: 2-2.9
Unacceptable: < 2

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Collection, Analysis, Reporting

- ## Collection
  - Questionnaire completed by key acquirer staff who have first hand knowledge of supplier performance for a single project or a series of projects

- ## Analysis
  - Analyze feedback based on whatever established scale was used and compare against other feedback for the same supplier, from different competency areas (e.g., design, schedule, quality)

- ## Reporting
  - Communicate through simple spreadsheet, PowerPoint slide or acceptance criteria template.

Challenges:
- Clarity around acceptance criteria
- Communication as to what is behind the measure

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Bringing It All Together - Sample Acquirer Measurement Framework

Business Value

Financial   Customer

Business Value of Results	Portfolio Alignment (Investment)	Level of Response to Customers	Customer Satisfaction

5 — **Business Level** - Enterprise level measures based on Quantitative Roll-up and Drill-down capabilities enable Business Value analysis

Internal Processes   Learning and Growth

Organization Unit Performance	Organization Unit Capability	Job Roles and Skills Development	Domain and Technology Expertise

4 — **Organizational Level** - Measures aggregate the performance and capability of the organizational unit

Standard IT Project Performance Measures

- Cost Performance
- Schedule Performance
- Functionality Performance
- Quality Performance

3 — **Project Level** - Standard IT Project Performance measures are derived from Supplier and Acquirer base data

Acquirer and Supplier Touch Points

2 — **Touch Points** – Suppliers report base data, as defined in the contract, to enable monitoring of project progress

Acquirer Data
- Process Performance
- Technology Effectiveness
- Business Results

Supplier Data
- Schedule and Progress
- Product Quality
- Product Size and Stability
- Resources and Cost
- Customer Satisfaction

1 — **Categories of Base Measures** – Common measures from suppliers provide a measurement foundation based on industry standards

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In Conclusion.....

- Acquirer uses measurement to manage acquirer work

- Acquirer specifies measures in the contract to have visibility of the supplier execution/work progress

- Acquirer uses measurements from the supplier in combination with acquirer measures to access the overall "health" of the project

- It takes a combination of acquirer and supplier measurements to successfully execute the project

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