

Integrating Earned Value Management into Enterprise Portfolio/ Project Performance Metrics



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Background

KM Systems Group has worked with organizations to develop and implement project performance metrics that integrate earned value management, functional performance and provide a quick overview snapshot for senior management































KMSG project performance metric development uses a structured methodology that provides summary level metrics with lower level supporting earned value management detail

KMSG leverages existing data and processes to minimize the cost of implementation

KMSG implementation includes a quick start set of metrics to provide immediate value to the enterprise at all levels

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Project Management Performance Metrics Dashboard (fully integrated with EVM)

	Financial	Schedule	Technical	Resources	External	Program Manager
Program A						
Program B						
Program C						
Program D						
Program E						

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Performance Metrics Objectives

- **Develop and implement an objective measurement system to evaluate project performance, which:**
 - Provides quality and timely performance metrics
 - Ensures consistent metrics across a portfolio of projects reconcile with earned value management
 - Leverages data from existing sources
 - Becomes an integral part of the enterprise management project performance review process
 - Gives executives a bird's-eye easy-to-understand view of project performance
 - Enables the enterprise to prevent, detect, and respond to issues
 - Metrics provide predictive trends
 - *Provides fair and impartial metrics that creates a positive factor to motivate improved project performance*

The way you measure projects influences behavior of the entire project team

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Comprehensive metrics criteria ensures effective metrics

- **Linkage** – Measure is aligned with enterprise goals and mission
 - Each metric needs to be mapped to a path that helps achieve the enterprise mission
- **Clarity** – Measures are clearly stated and definitions consistent with calculation
 - Metrics must be understood with but-in from the project team
- **Measurable Target** – Measure has a numerical goal or clear qualitative indicators
 - Numeric or scaled metrics are easily understood
- **Objectivity** – Measures is reasonably free from bias
 - Metrics must be based on a well defined outcome

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Comprehensive metrics criteria ensures effective metrics

- **Reliability** – Measure produces the same result under similar conditions
 - Projects are not identical, but the metrics must measure a common characteristic
- **Core Project Activities** – Measure covers the activities that is expected to support the program
 - Metric must relate to activities and functions impacting program performance
- **Limited Overlap** – Measure provides new information beyond that provided by other measures
 - Metrics should provide additional information not provided elsewhere
- **Enterprise Wide Priorities** – Metrics includes enterprise priorities, such as quality, timeliness, and cost of service
 - Key success factors to the enterprise must be included in the metric set

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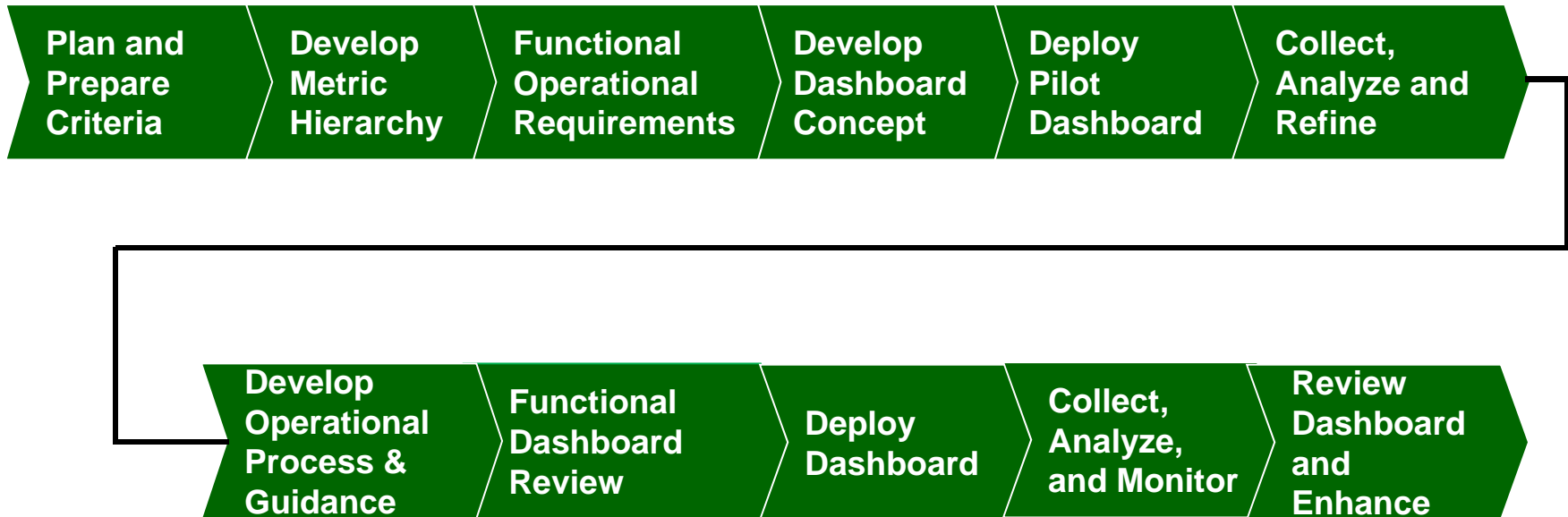
Value of establishing project metrics with clear comprehensive criteria

- **Business-based decision making**
 - Provides an early warning on program performance issues before they escalate into major undertakings
 - Focuses Senior Leadership on what drives program success rather than on the program details
- **More predictable project outcomes**
 - Dependencies among programs are easier to identify
 - Provides timely, accurate, and relevant program performance information
- **Enhanced investment management communication**
 - Reduces burden and overhead on programs by leveraging common data and methodology across the enterprise
 - Supports enterprise goals for cost and schedule
 - Strengthens business cases and action plans using hard performance metrics
 - Ensures effective oversight communication with investment review boards

Ensures project management metrics are consistent with earned value management

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Metrics Development Methodology



Developing metric dashboards is an iterative process

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Example of a Project Performance Dashboard

Project Summary Metrics

Financial	Schedule	Technical	Resources	Investment Review Board	Program Manager
G	G	R	G	Y	G

Supporting Metrics

Portfolio Metric	Financial	Schedule
Definition	Measure of cost performance of work performed	Measure of schedule performance of work performed
EVM Metrics		
- Cost Performance Index (CPI)	G	
- Program Cost Reserve	G	
- To-Complete Performance Index (TCPI)	G	
- Cost Variance-At-completion (CVAC) %	G	
- Obligation Rate	G	
- Schedule Performance Index (SPI)		G
- Program Schedule Reserve		G
- Schedule Variance-At-Completion (SVAC) %		G
Level 1 Project Milestones		
- Negative Deviations		G
Acquisition Schedule Milestones		
- Negative Deviations		G
Corporate Workplan Goals		
- Negative Deviations		G

Portfolio Metric	Technical
Definition	Measure of technical metrics and milestones of work performed
Level 1 Milestones	
- Negative Deviations	n/a
Technical Metrics	
- Requirements Stability	G
- System Defects	G
- Test Results	G
- Deployment**	R
- Value of remaining High Risks	G
- Technical Variance At-Completion (TVAC)	G

Portfolio Metric	Resources	External Interest
Definition	Measure of current funding and staffing	Assessment of External Reviews
Resource Metrics		
- Prime Contractor	G	
- Support Contractors	G	
- FAA	G	
- Funding	G	
External Reviews		
- Investor A		Y
- Investor B		G
		Y

**Last Site delay due to facility construction

8 of the 25 metrics use EVM data

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Each Metric is clearly defined with owners and R/Y/G criteria

Definition: The Project

Schedule Reserve metric is the remaining schedule reserve days as a percentage of the remaining schedule estimate to complete expressed in days. Project schedule reserve is schedule days set aside (outside the project performance measurement baseline) for schedule risk mitigation and unforeseen problems.

Metric Owner: PMO

Data Provider: Project Office

Source: Project Schedule

Frequency: Monthly

Formula:

Baseline Schedule Reserve % = project schedule reserve in days divided by remaining ETC schedule in days

Schedule Reserve = Remaining days to baseline completion date minus ETC schedule days

ETC Schedule (in days) = ETC Date minus Current Date

Metric Baseline = Approved project (Schedule)

Red/Yellow/Green Criteria

Green: No significant erosion of established project schedule reserves (remaining reserve is >10% of remaining days to complete)

Yellow: A significant erosion of established project schedule reserve (<10% of remaining days to complete)

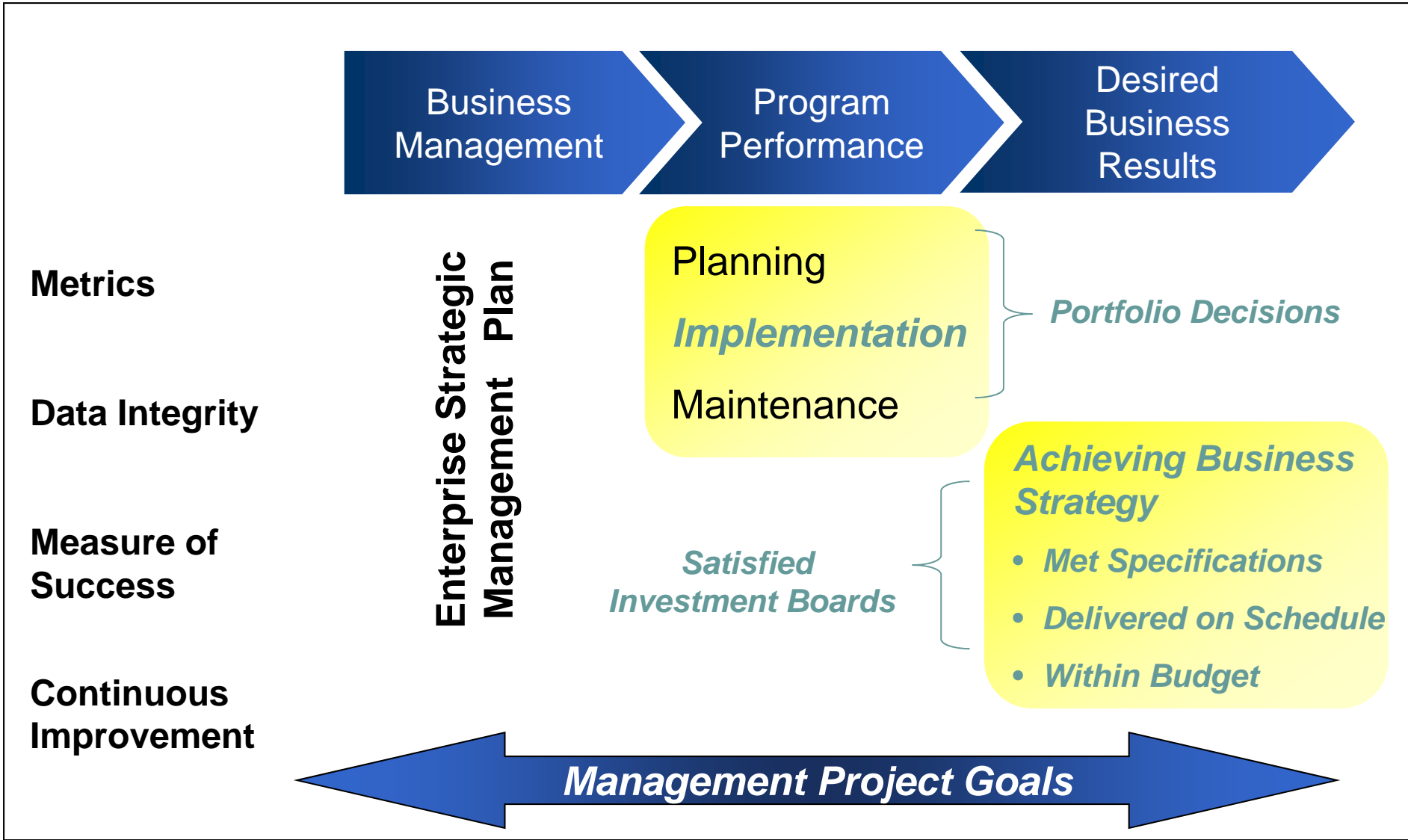
Red: There is not a remaining project schedule reserve

G-Y-R Metric Definitions are well defined

	Green	Yellow	Red
Enterprise Cost Performance Goals Criteria	No significant cost overrun, relative to approved baseline:	A significant cost overrun, relative to approved baseline:	A significant cost overrun, relative to approved baseline:
Program Cost Reserve	No significant erosion of established program cost reserves (reserve >10% of remaining cost to complete);	Significant erosion of established Program cost reserve (<10% of remaining cost to complete);	There is not a remaining Program cost reserve;
Cost Performance Index (CPI)	<u>and</u> CPI ≥ 0.950 ;	<u>or</u> CPI is between .900 and 0.950;	<u>or</u> CPI < 0.900;
To-Complete Performance Index (TCPI)	<u>and</u> TCPI/CPI < 10%;	<u>or</u> TCPI/CPI between 10 % and 20%;	<u>or</u> TCPI/CPI > 20%;
Cost Variance at Completion %	<u>and</u> Cost VAC less than -5%	<u>or</u> Cost VAC between -5% and -10%	<u>or</u> Cost VAC > -10%
Obligation Rate	Funds are obligated within 30 days of funding	Funds are obligated 31 - 60 days of funding	Funds are obligated greater than 60 days of funding

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Portfolio / Project Metrics Implementation Planning includes Continuous Improvement



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Continuous Improvement Metrics ensure the Metrics are achieving desired results

Business metrics annually assessed to determine if Portfolio metrics are influencing desired results

Program Re-baselines

Average program cost performance

Average program schedule performance

Funding obligations versus requests

Investment Review Board Oversight Actions

Peer Projects Comparisons

Linkage between enterprise strategic goals and project performance

**Periodic
Independent
Assessment**

Improvement Metrics are those measures that reflect the health of the enterprise and are influenced by the Metric Program

Summary

- ✓ The metrics should be used as a positive action to improve performance, not punitive.
- ✓ Using a comprehensive set of metric criteria increases probability of success
- ✓ Using existing data and processes reduces the cost of implementation
- ✓ Quick Start metrics provides early benefit to the enterprise
- ✓ The metrics should be reviewed and improved on an on-going basis.
- ✓ The metrics should support the enterprise strategic goals
- ✓ The metrics should meet Investment Review Board needs
- ✓ The Metrics should integrate earned value management



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