



Performance-Based Project Management

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delivering results that endure

“Never tell people how to do things. Tell them what to do and they will surprise you with their ingenuity.”

Geo. S. Patton



Agenda

- A Typical Scenario
- Objectives
- Overview of Performance-Based Service Acquisitions
- The Performance-Based Program Manager
 - Job Analysis
 - Job Planning
 - Execution
- A Practical Example
- Review and Discussion

Scenario—Setting the Context

A major financial services company has decided it must upgrade a critical data processing system. The data is highly transactional and very perishable—if not processed quickly and accurately the information conveyed by the data is lost.

This upgrade will require a significant modification to the existing software. The system exists in a universe of systems that are functionally related to the system to be upgraded. Given the mission-critical role of this system, it is imperative that the anticipated work is completed on schedule.

It is highly desired for this upgrade to be completed on a performance-basis as the company must ensure the software contractor has a clear understanding of the desired outcomes of this effort. Further, the financial services company believes the incentives of a performance-based contract will motivate the contractor to achieve higher levels of quality.

Workshop Overview

- Intended audience
 - Government CORs, program and project managers, and technical leaders
 - Contractor program and project managers; business managers; contract administrators
- Goal: enable the successful execution of programs on a performance basis
- Objectives
 - Familiarize participants with the objectives and required elements of PBSA
 - Describe the major phases of planning and execution
 - Provide a guided, practical exercise



Performance-Based Service Acquisitions

Performance-Based Service Acquisitions

- Strive to produce a strong alignment between job outcomes and mission needs
- Focus on the desired results, the what, not the how
 - Allows contractors to continually modify approach to ensure maximum performance
 - Encourages innovation
 - Expands industrial base
 - Shifts risk from Government to contractors
- Use incentives and remedies to motivate the highest levels of contractor performance
- Encourage frequent and open communications between the Government and industry

A Rose, By Any Other Name...

- A common misperception is that Performance Based Contracting refers to a specific type of contract
- **NOT TRUE!!** The term Performance-Based Contracting actually indicates the use of an acquisition strategy that is focused on the required performance, and not on a type of contract
- To avoid on-going confusion, the Office of Federal Procurement Policy has adopted the term:

Performance-Based Service Acquisition (PBSA)

Other Common Misconceptions About PBSA

- PBSA equates to “Firm Fixed Price” Contracts
 - **Not true.** Like any acquisition, the contract type should be of the type most likely to motivate the contractor to perform at optimal levels. (FAR Part 37.6 defers to Part 16.1).
- Performance-Based Contracts are “Completion” contracts
 - **No.** Most completion contracts do not include a performance standard or a performance measurement plan. It is also difficult to define “completion” in terms of services. Finally, a completion contract contains no incentives for exceeding the minimum contract requirements.
- Performance-Based Contracting requires Earned Value Management
 - **Not true.** Earned value was established to help manage cost and schedule risk on large development contracts. EV might not add value to contracts for professional services.

Contract Types Under PBSA

- PBSA is defined in FAR Part 37.6, which does not prefer any type of contract.

“Contract types most likely to motivate contractors to perform at optimal levels shall be chosen (see Subpart 16.1 and, for research and development contracts, see 35.006).”
- FAR Part 16.1 provides guidance that the type of contract should be selected based on the
 - type and complexity of the requirements
 - appropriate transfer of risk to the contractor
 - urgency of the requirements
 - contractors cost accounting system

As program and project managers, you need to know when a particular type of contract or Task Order is appropriate.

Selecting a Contract Type for PBSA

Use a Fixed Price contract if...

- Delivery quantities can be reasonably estimated
- Processes and methods are well-understood
- Requirements or specifications are stable and unlikely to undergo significant change
- The contractor's cost accounting system has not been certified

Use a Cost Reimbursable contract if...

- Delivery quantities are uncertain
- Requirements are vague, incomplete, or likely to change during the period of performance
- The government's urgency makes it acceptable to trade additional risk for speed of execution
- The contractor has a certified cost accounting system

Avoid Term contracts (e.g., Time and Materials)—these contracts require only “Best Effort” and cannot motivate contractors to exceed the minimum standards for performance.

Required Elements of a PBSA

- **Performance Work Statement (PWS)** —identifies the technical, functional, and performance characteristics that must be achieved.

OR

- **Statement of Objectives (SOO)** —a summary of key goals, outcomes, or both that are incorporated into performance-based acquisitions. An alternative to the PWS that requires the contractor to propose the requirements standards and measures. (Gov't writes SOO, contractor proposes a PWS)

AND

- **Quality Assurance Surveillance Plan (QASP)** —a plan for assessing contractor performance. (Gov't)

NOTE: A contract is considered performance-based when at least 80% of the available funds are allocated on the basis of performance criteria.

The Performance Work Statement

Performance Requirements

Performance Requirements define what must be accomplished in terms of measurable, mission related outcomes. Avoid statements of how the work must be performed.

Strive for the critical few rather than the trivial many!

Performance Standards

Performance Standards define the level of service required to meet mission objectives-how well the work must be performed to satisfy requirements.

Performance standards are the cost drivers - make sure they are appropriate to the need.

Performance Measures

Performance Measures describe the methods used to assess contractor performance.

Surveillance is the Government's main job

Incentives & Remedies

Optional: Incentives and Remedies are used to motivate contractors to achieve optimal levels of performance.

The hardest job is often determining appropriate Performance Standards. How much is enough? Too much?



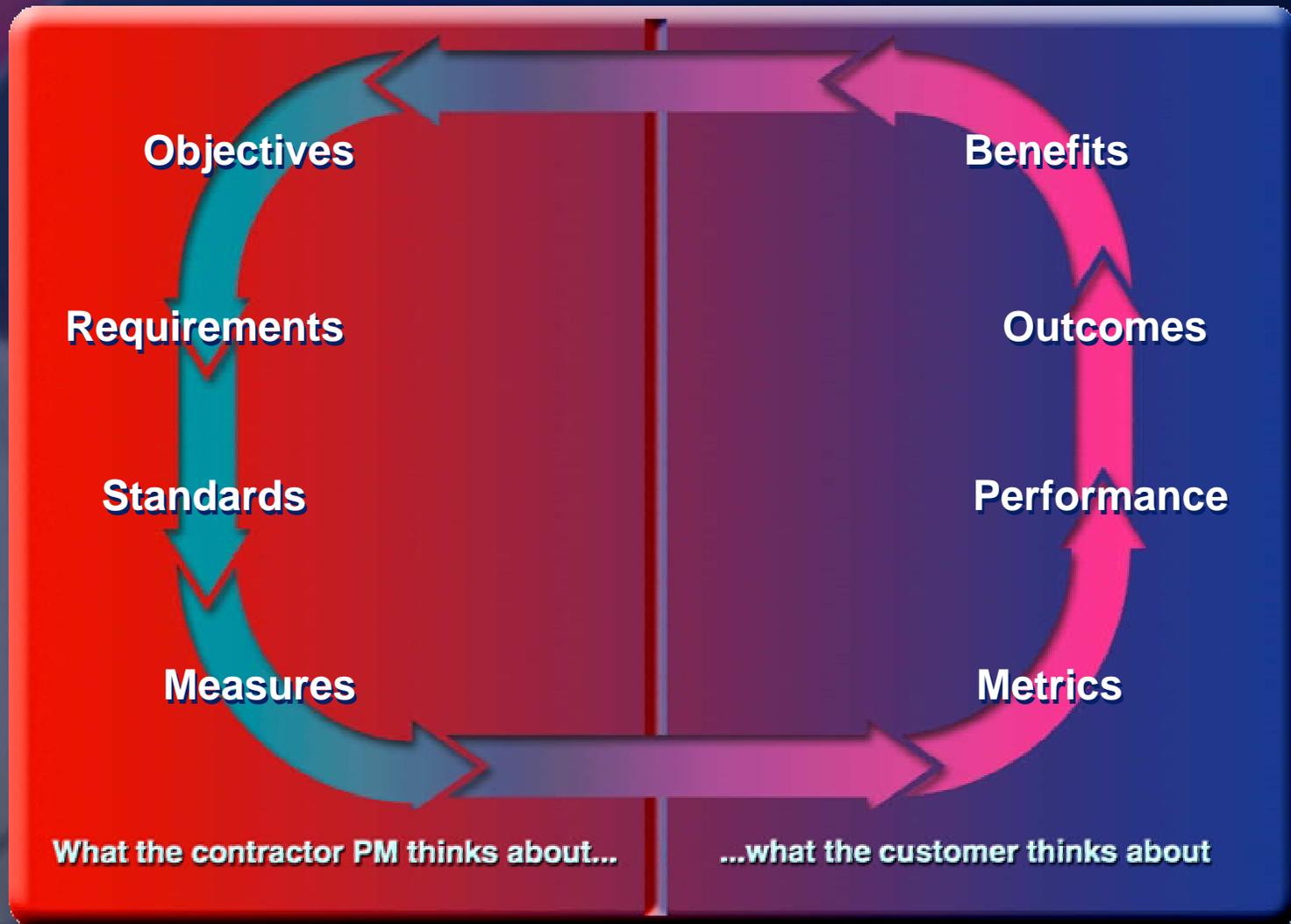
The Performance-Based Program Manager

3 Phases of a Performance-Based Program

- Job Analysis: determining what performance is required to satisfy the mission needs and objectives
- Job Planning: transforming the Performance Work Statement into a set of task plans, schedules, and budgets that provide a management baseline
- Execution: delivering the required performance to achieve the desired outcomes; measuring and reporting performance against the PWS

The program manager or task leader has an active, important role in each phase.

Two Perspectives of Performance





✓ Job Analysis

Job Planning

Job Execution

Job Analysis—SOO or PWS?

- If the government provides a Performance Work Statement
 - Review the PWS for logical and functional consistency
 - Do the standards logically follow the requirements?
 - Are the measures clear and aligned with the standards?
 - Is the Quality Assurance Surveillance Plan consistent with the job needs?
- If the government provides a Statement of Objectives
 - Perform the job analysis
 - Decompose the objectives into a set of required outcomes
 - Identify the standards that must be achieved to ensure the outcomes
 - Are the performance requirements clear and unambiguous?
 - Identify a set of measures that will produce evidence of the actual level of performance
 - Develop the Performance Work Statement (and possibly assist with the QASP)

Comparison of Task Types

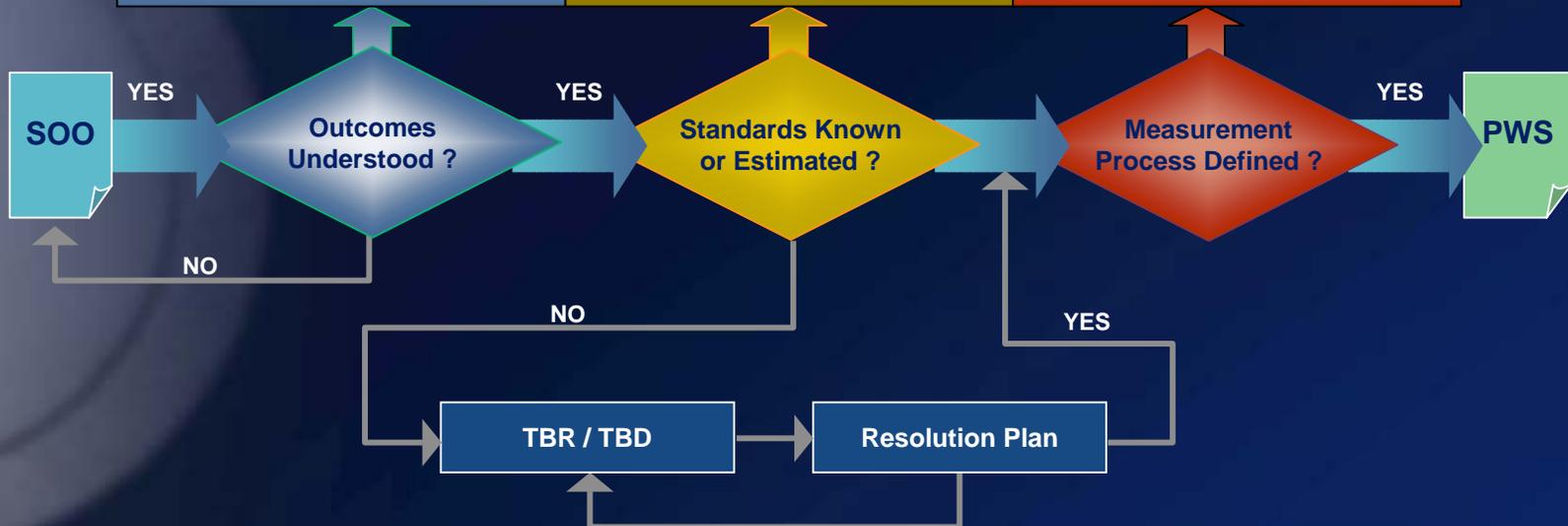
	Type of Effort	
	Performance-Based (Most Preferred)	LOE (Least Preferred)
Purpose	Acquisition of Services when: <ul style="list-style-type: none"> • Desired outcomes are known • Results can be linked to needs • Standards are known or can be estimated • Performance above minimum levels is desired 	Acquired services when: <ul style="list-style-type: none"> • Delivery quantities are unknown • Processes are uncertain • Requirements are unstable
Artifacts	<ul style="list-style-type: none"> • PWS • Performance Metrics/Reports • QA and RM plans 	<ul style="list-style-type: none"> • Expenditure reports • Spend plans • Activity reports
Risk Owner	<ul style="list-style-type: none"> • Contractor 	Government
Contract Deliverables	<ul style="list-style-type: none"> • Results • Artifacts 	Staff hours/labor
Key Processes	<ul style="list-style-type: none"> • Requirements analysis • Quality Assurance • Risk Management 	<ul style="list-style-type: none"> • Staffing • Financial reporting

Requirements, Standards, and Measures

- Performance Requirements
 - Describe what, not how
 - Effectiveness (outcomes): qualitative statements
 - Efficiency (outputs): quantitative statements
 - Define a result that benefits the customer
 - Are aligned with organizational needs
- Performance Standards
 - Describe the level of performance necessary to produce a desired result
 - Define
 - Complexity or Functionality
 - Quality
 - Timeliness
 - Cost
- Performance Measures
 - Statement of what gets measured, by whom, and when
 - Inspection, demonstration, analysis, or test

Developing the Performance Work Statement

Performance Requirements	Performance Standards	Performance Measurement Method
Effectiveness	Complexity/Functionality	Inspection
Efficiency	Cost	Analysis
	Timeliness	Demonstration
		Test



A Short Example

- Performance Requirement: “System enhancements shall provide a 10% increase in the message throughput capability” (Efficiency)
- Performance Standards:
 - Messages shall be formatted IAW the Division documentation standard (Complexity)
 - Messages shall be free of spelling or grammatical errors (Quality)
 - Message processing shall not impair other system functions (Functionality)
 - Other??
- Performance Measurement:
 - Message formats will be verified by comparison with the documentation standard (Inspection)
 - Spelling and grammar will be verified by random sampling of the system output (Test)
 - System performance shall be verified by operational demonstration (Demonstration)

Note: The Acceptable Quality Level (AQL) defines any allowable deviation from the performance standard.

The Performance-Based Task Order

Technical Task Order xxxx (Mod y)
TTO Title

The purpose of this modification (Mod y) is to ... (If applicable)

A. Overview:

B. Task Managers (Both Government and Contractor):

C. Place of Performance:

D. Period of Performance: 26 September 2009

E. Statement of Work Reference:

H. Statement of Objectives:

I. Deliverable/Milestone/Task Schedule:

CDRLs:

-

Non-CDRLs:

-

J. Referenced Technical Process Plans:

K. Estimated Travel Requirements (if applicable):

L. Government Support Required (i.e. facilities, GFI//GFE/GFM)

M. Special Equipment/Facility Requirements:

N. Applicable Award Fee Criteria:

Performance Requirement	Performance Standard	AQL	Measure
The configuration baseline shall accurately reflect the scope of the project.	1. The baseline shall reflect all hardware and software items in the system.	1% deviation	Quarterly inspection of configuration database
	2. Configuration records shall be complete and error-free.	0.5% deviation	Monthly random sampling of configuration database

Sample Fee Determination Plan - Innovation

Technical Task Order xxxx (Mod y)
TTO Title

The purpose of this modification (Mod y) is to ... (If applicable)

A. Overview:

B. Task Managers (Both Government and Contractor):

C. Place of Performance:

D. Period of Performance: 26 September 2003 – 31 March 2004.

E. Statement of Work Reference:

H. Statement of Objectives/Performance Work Statement

I. Deliverable/Milestone/Task Schedule:

CDRLs:

-

Non-CDRLs:

-

J. Referenced Technical Process Plans:

K. Estimated Travel Requirements (if applicable):

L. Government Support Required (i.e. facilities, GFI/C)

M. Special Equipment/Facility Requirements:

N. Applicable Award Fee Criteria:

N. Applicable Award Fee Criteria

The outcomes defined for this task are such that contractor innovation can substantially enhance delivery. Many of the threshold performance standards can be exceeded.

All performance standards met, with at least 50% or more Exceeded (where possible)	100% of Incentive Fee
All performance standards met, with at least 25% or more Exceeded (where possible)	90% of Incentive Fee
All performance standards met	80% of Incentive Fee
Two or fewer performance standards NOT met	70% of Incentive Fee
50% of performance standards NOT met	35% of Incentive Fee
No performance standards met, or a Critical performance standard NOT met	0% of Incentive Fee

Sample Fee Determination Plan - Conformance

Technical Task Order xxxx (Mod y)
TTO Title

The purpose of this modification (Mod y) is to ... (If applicable)

A. Overview:

B. Task Managers (Both Government and Contractor):

C. Place of Performance:

D. Period of Performance: 26 September 2003 – 31 March 2004

E. Statement of Work Reference:

H. Statement of Objectives/Performance Work Statement:

I. Deliverable/Milestone/Task Schedule:

CDRLs:

-

Non-CDRLs:

-

J. Referenced Technical Process:

K. Estimated Travel Requirements:

L. Government Support Requirements:

M. Special Equipment/Facilities:

N. Applicable Award Fee Criteria:

N. Applicable Award Fee Criteria

The outcomes defined for this task require contractors to conform to defined processes or procedures. Few, if any of the performance standards can be exceeded

All performance standards met	100% of Incentive Fee
One performance standard NOT met	90% of Incentive Fee
Two performance standards NOT met	80% of Incentive Fee
Three performance standards NOT met	50% of Incentive Fee
More than three performance standard NOT met	35% of Incentive Fee
No performance standards met, or a Critical performance standard NOT met	0% of Incentive Fee



Job Analysis

✓ Job Planning

Job Execution

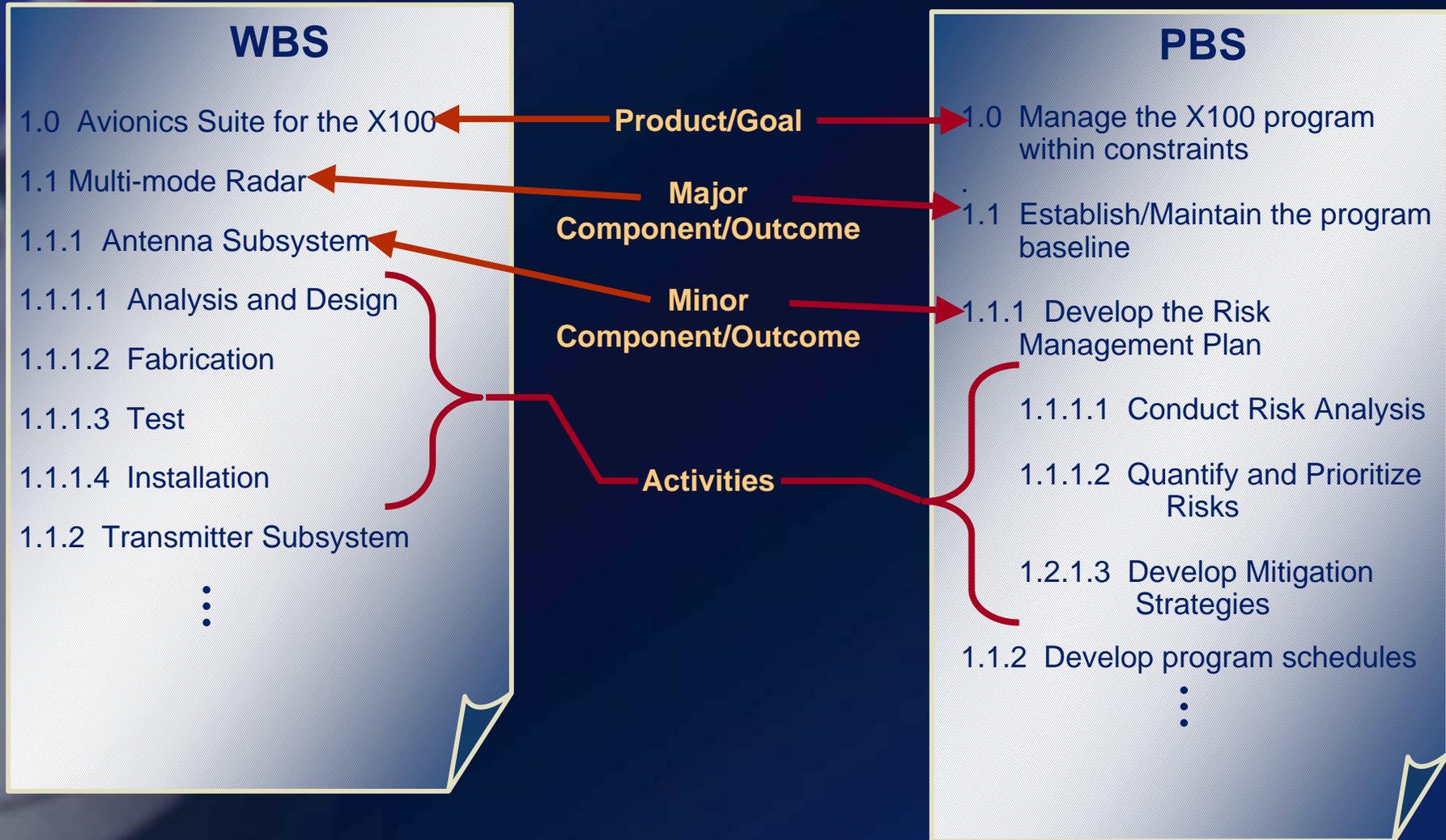
Major Elements of Job Planning

- Developing the Performance Breakdown Structure
- Conducting a Risk Analysis
- Cost Estimating
- Scheduling the Work
- Assigning the Work
- Creating the Quality Assurance Plan

The Performance Breakdown Structure

- Classical systems development, or completion, efforts use a product-oriented Work Breakdown Structure to organize and plan around the product to be developed.
- A similar concept, the Performance Breakdown Structure, is used to organize and plan around the results that must be achieved.

The Performance Breakdown Structure



Cost Estimates and Performance Standards

- ⋮
- 1.1.1 **Develop the Risk Management Plan**
- 1.1.1.1 Conduct Risk Analysis
 - 1.1.1.2 Quantify and Prioritize Risks
 - 1.2.1.3 Develop Mitigation Strategies
- ⋮

The requirement is the same in both scenarios...do you think the cost is the same?

Scenario 1

- Standard 1: “The Risk Management Plan shall be adapted and tailored from the existing Systems Division plan.”
- Standard 2: “The Risk Management Plan shall address all risks for which the estimated cost exceeds \$100,000.”

Scenario 2

- Standard 1: “The Risk Management Plan shall be developed according to IEEE Std 880.”
- Standard 2: “The Risk Management Plan shall prioritize all identified risks, based on dollar value, using vendor quotes or certified pricing data.”

Risk Analysis

- In the context of program management, “Risk” is the possibility of loss or damage to a program.
- In a performance-based program, where the contractor is responsible for the outcomes, risk management is an important activity.
- Risk Management consists of three elements:
 - Risk Identification
 - Risk Quantification
 - Risk Mitigation
- Risk analysis is a planning activity...risk management is a continuous process

Risk Analysis

- Risk Identification—figuring out what could go wrong
 - e.g., the possibility that a critical technology will not be supported by the vendor
 - e.g., the possibility that important intellectual capital will leave the company
- Risk Quantification—estimating the consequences of something going wrong
 - Probability of occurrence
 - Impact (cost and schedule) of occurrence
- Risk Management—strategies for reducing the impact of a risk
 - Action plans
 - Residual risk

Cost Estimating

- For performance-based efforts, the work is complete when all the standards are achieved
- Similarly, the cost of the completed work is driven by the costs of achieving the standards
- Both the level of the standard, as well as the type of standard, are key factors in estimating costs

Job Scheduling

- Performance-based efforts are scheduled according to:
 - Performance milestones
 - Client-defined criteria (constraints)
- Performance milestones are intermediate steps to full satisfaction of the performance standards
 - Based on performance, not the passage of time
 - Based on degree of satisfaction, not the accumulation of cost
- Schedule milestones should coincide with performance measurement intervals
 - You can't claim performance until the work has been measured and the performance has been verified

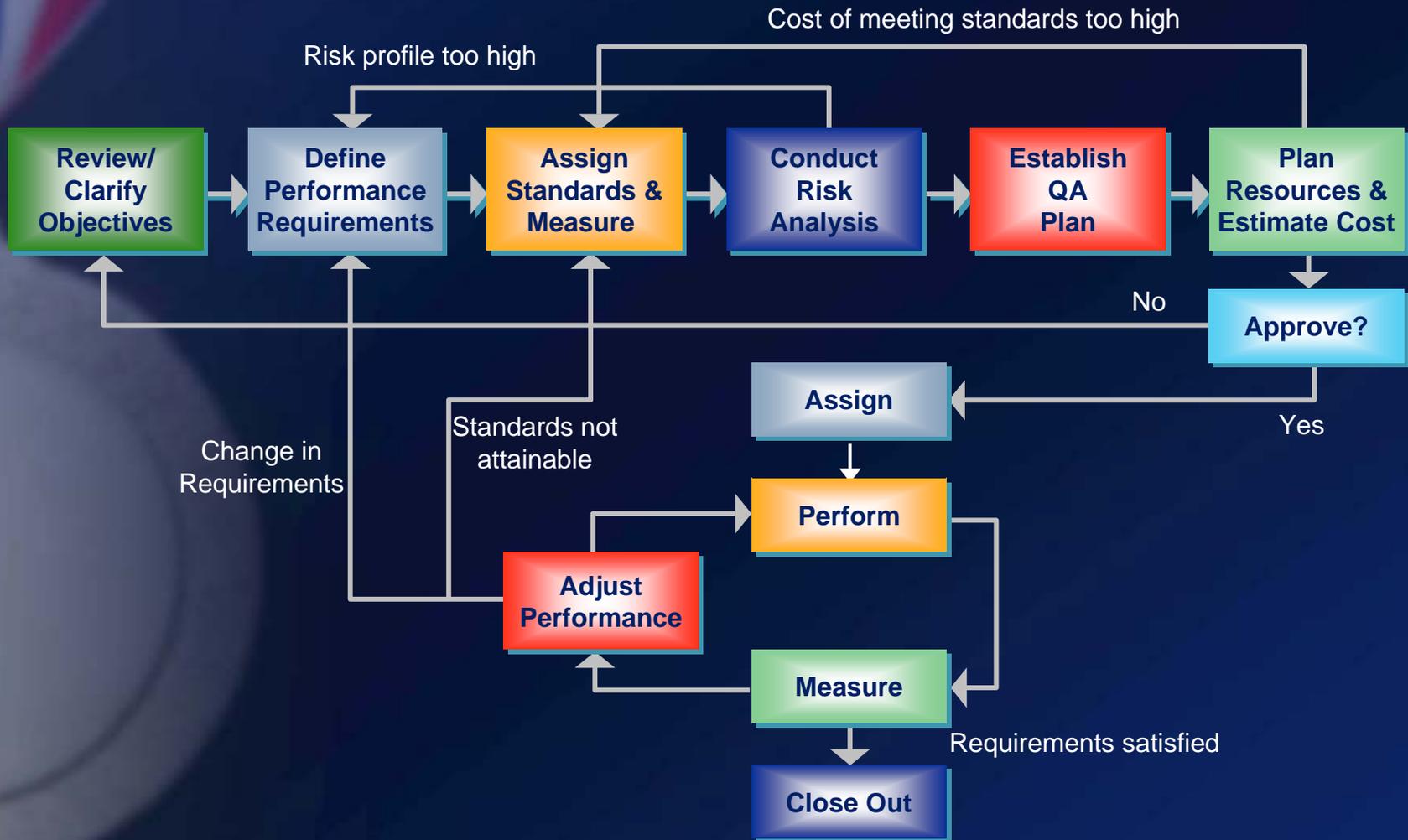
Work Assignment

- Performance-based work requires that someone must be responsible and accountable
- Try to assign responsibility for performance requirements along team boundaries whenever possible to enable clear visibility and accountability for performance
- Integrated task teams can be used, but the task lead must have the means to ensure performance standards are met
 - Replace team members if performance issues cannot be resolved
 - Recommend remedies and incentives
 - Request a change in team composition

Work Assignment Matrix

	Team A	Team B	Team A & B	Unassigned
Performance Requirement #1	X (Work Pkg #)			X (Work Pkg #)
Performance Requirement #2			Team B Leads (Work Pkg #)	
Performance Requirement #3		X (Work Pkg #)		

Performance-Based Task Process



Quality Assurance

- The contractor is responsible for ensuring the quality of all work performed. (The government's job is surveillance, which is a monitoring function.)
- The QA plan should address
 - What gets measured, when, and by whom
 - The processes in place to identify and remediate quality issues
 - The responsible QA monitor
- The contractor QA plan should be minimal, dynamic, and integrated at the level where the work is performed.
 - The goal is to prevent substandard work, rather than catch it after the fact
- Rigor of the QA process should be matched to the needs of the program



Job Analysis

Job Planning

✓ Job Execution

3 Elements of Job Execution

- Performance Measurement
- Quality Assurance
- Reporting

Performance Measurement

- The PWS identifies all relevant performance measures
- It is important that processes and work flows produce the data that must be measured
 - Discuss the measurement requirements with the job managers
 - Resolve areas of misalignment with work processes or confusion about the measurement plan
 - Ensure the type and quantity of data identified in the PWS will be produced as the work is performed
- Performance measurement is simply a means to assess progress—not a program goal

Quality Assurance

- Quality Assurance is a continuous, background activity
 - Determines if the quality of work performed meets or exceeds the performance standards
 - A major element in program management and control
 - A significant element in risk management
- The Quality Assurance monitor should be someone who is independent of the work being measured
- The rigor of the Quality Assurance program should be matched to the needs of the project
- Focus on insight rather than oversight

Quality Assurance

- Independent of TTO and PWS generation activities
- Three major functions
 - Validation
 - Verification
 - Reporting

Validation—Independent review of the QA plan to ensure the measurements address the standards



Quality Assurance reports are given directly to the government Performance Monitor & cc: the contractor PM

Verifies the performance measurements for completeness and accuracy

Performance Reporting

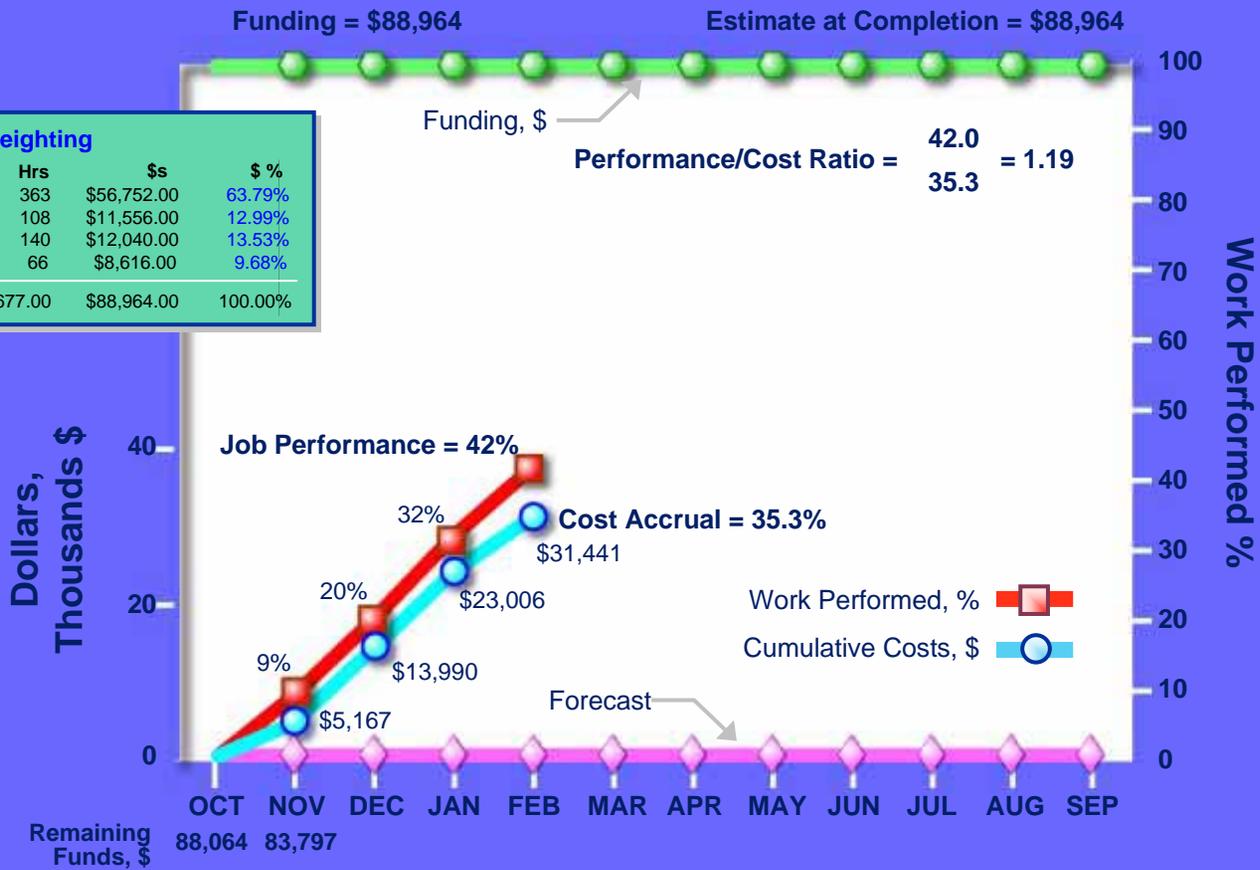
- Contract-Defined Performance reporting vehicles
 - Project cost reports (Cost and Performance variance)
 - Contract-defined reports for technical performance
 - Formal reviews (e.g., Performance Measurement Reviews)
- Quality Assurance reports
- In any format, performance is assessed relative to the performance standards to gauge contractor progress in meeting the requirements

Project Performance Report--Example

TTO Performance

Requirements Weighting

	Hrs	\$s	\$ %
Requirement 1	363	\$56,752.00	63.79%
Requirement 2	108	\$11,556.00	12.99%
Requirement 3	140	\$12,040.00	13.53%
Requirement 4	66	\$8,616.00	9.68%
Total	677.00	\$88,964.00	100.00%



- 
- Sample Problem

Sample Statement of Objectives

The Trustworthy Financial Services company provides business and market intelligence to investment brokers, large corporate clients, and foreign partners. Trustworthy's primary business activity is the accumulation and processing of highly transactional financial data. Important information is lost if this data is not collected and accurately processed in a timely manner. Trustworthy has determined that an important data processing capability is no longer capable of handling the volume or complexity of the financial data that must be analyzed in near real time.

The existing system is critical to the daily business operations of Trustworthy and cannot be easily replaced. It has been determined that the best course of action is to upgrade this system by adding required capabilities and features to the existing software. A document that details the required new capabilities and features has been prepared and validated by the Business Analysis department. New functions that are deemed "critical" have been indicated as such in the document. The IT department has mandated that the infrastructure supporting this system cannot be upgraded at this time.

Trustworthy's technical staff has determined that this system must be capable of at least a 20% increase in the number of financial records it collects, processes, and reports. Due to the importance of this system in daily transactional analysis, the current system must remain operational while the upgraded capabilities are integrated and deployed. Since other processing and reporting systems use as inputs the information provided by this system, care must be exercised that network and data interfaces are not inadvertently modified.

Trustworthy requires your company to propose a Performance Work Statement that meets or exceeds our needs and provides a "best value" solution.

Key Points from Trustworthy's SOO

- A requirements document has been prepared that identifies the functions and features that must be added to the existing system
- The throughput capacity of the existing system must increase by at least 20%
- Some new features are “critical” while others are not
- No changes can be made to the hardware components
- All upgrades must work with the existing interfaces
- The operational capability of the existing system must be preserved

Job Analysis—Performance Requirements

- The outcomes that must be produced to satisfy Trustworthy's needs
 - Design and develop software enhancements to the current applications
 - Integrate these enhancements into the operational system
- Cross-check...will these outcomes satisfy all of Trustworthy's stated objectives?
- Have we inadvertently introduced outcomes that are not required?

Job Analysis—Performance Standards

- Design and develop software enhancements...
 - Std #1: Software enhancements must incorporate 100% of critical functions and 80% of non-critical functions (TBR)
 - Std #2: Tested and delivered software shall contain no more than 3 coding errors per 1,000 lines of source code.
 - Std #3: Tested and delivered software shall not create “fatal exception” conditions or halt program execution of any critical function.
 - Std#4: Newly developed software shall operate on the existing processing platforms.
- Integrate software enhancements...
 - Std #1: Integration of software enhancements shall not conflict with existing system devices or services.
 - Std #2: Software enhancements shall support existing network and logical interfaces.
 - Std #3: Software integration shall not require the system to be off-line for more than 6 contiguous hours. (TBR)
 - Std #4: Software integration shall be conducted between 8PM Friday and 6 AM Monday.

Job Planning—A Quick Example

- What are some key considerations when planning to upgrade Trustworthy's processing system?
 - **Consideration:** processing accuracy and coding error rates
 - **Implies:** rigorous software unit test
 - **Consideration:** Cannot produce run-time failures
 - **Implies:** detailed design analysis and test
 - **Consideration:** Interoperability with external systems
 - **Implies:** detailed system and interface analysis
- How would you address cost and schedule?
- What structure would you recommend/accept for the Fee Determination Plan?

Staffing? • Risk Management? • Work Allocation? • Quality Assurance?



Review & Discussion