Project Management Process

Part I: Performance Management Process Introduction

State of Missouri
Office of Information Technology

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PART I – Performance Management Process

Executive Summary

The Missouri Performance Management Manual presents the approach taken to develop the Missouri Performance Management process as well as a means to identify project specific performance measures. The manual presents this information in three parts:

- Part I – Performance Management Process Introduction
- Part II - Performance Management Process and Core Measures
- Part III – Appendices

Part I - Performance Management Process Introduction provides the introduction to Performance Management, outlines the methods used to develop the process, and introduces the process. In addition, Part I provides the business drivers, principles, best practices, and technology trends developed by the State to support the performance management effort.

Part II – Performance Management Process and Core Measures includes the performance measures process for identifying new additional performance measure and those measures that are core and to be collected for all projects. This section also provides suggestions for other measures.

Part III - Appendices contains a glossary of performance management terms, a table of acronyms, and other supplementary information in support of the performance management process. It also contains templates that can be used to identify and capture the measurement data and provides a section on the Performance Management Vitality Process.

The Missouri Performance Management manual presents the approach taken to develop the Missouri Performance Management process

CHAPTER 1: Introduction To Missouri Performance Management Process

Chapter 1 offers an introduction to the Missouri Performance Management Process. The chapter identifies the background and business case for the process as well as a definition of performance management, objectives, scope of the effort, process approach, a definition of deliverables, and focus of the effort. This guide will detail the process for identifying, gathering, updating and maintaining information, and how the information will be retrieved and used to baseline, monitor, manage, align and improve performance at all levels. The process fosters cooperation and information sharing among state agencies and other stakeholders enhancing the overall performance measures for information technology and other business related projects.

The goal of performance management is to assess one's progress toward achieving a set of predetermined goals and objectives.

Overview

The Office of Information Technology Chief Information Officer (CIO) has initiated a series of Guides to support an efficient and effective Project Management Methodology. Each of these Guides requires the establishment and usage of performance measures. The purpose of this guide is to help State Organization IT Managers create performance measures enabling them to be more successful in acquiring, deploying, and managing IT investments. To address performance issues the Office of Information Technology and the Information Technology Advisory Board (ITAB) has appointed a performance management committee that is charged with the development of the performance management process. The process is intended to provide guidance and recommendations to the ITAB for a performance based management process.

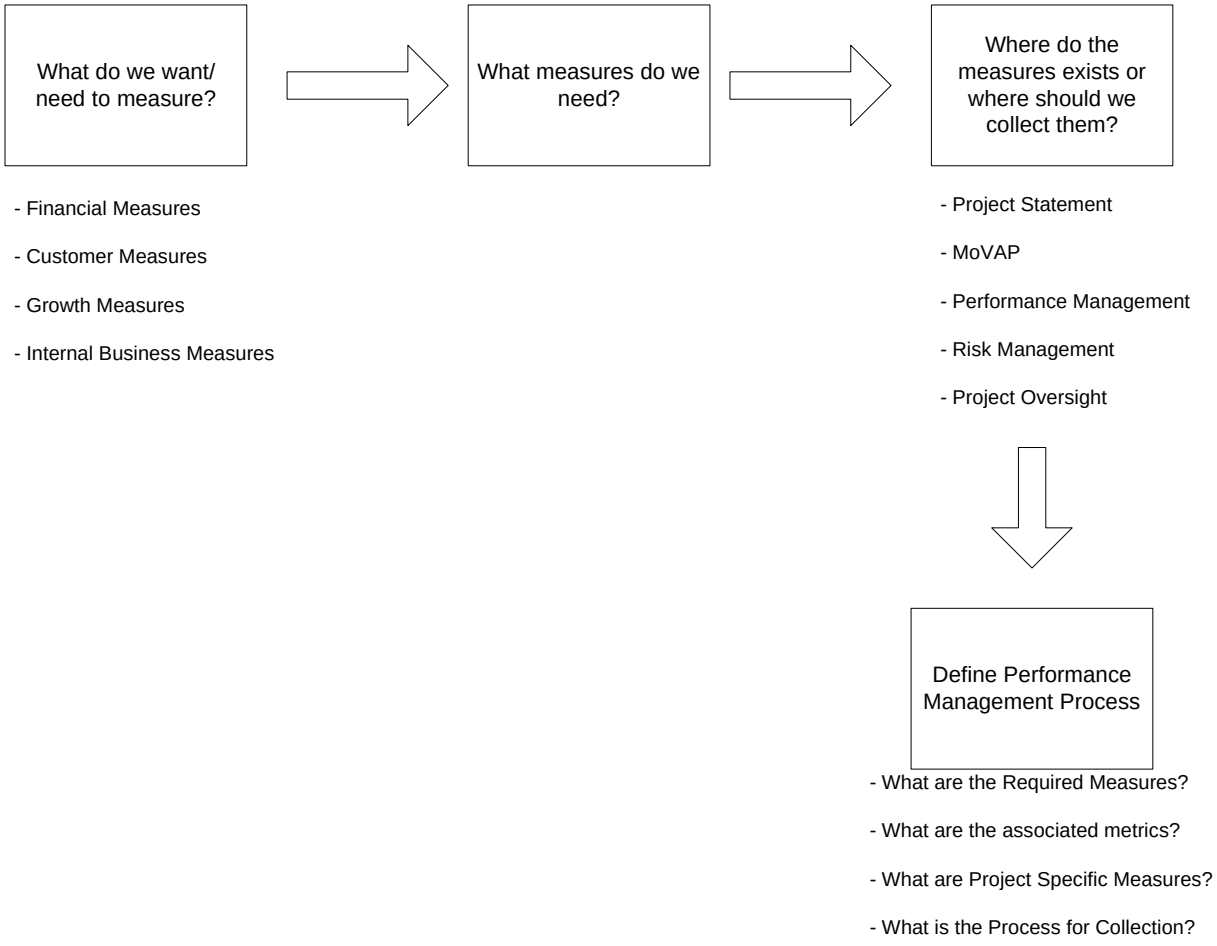
So why use metrics in project management? *Reinventing Government*, a book by Gaebler & Osborne, states we should manage by metrics because:

- What gets measured gets done
- If you don't measure results, you can't tell success from failure
- If you can't see success, you can't reward it
- If you can't reward success, you're probably rewarding failure
- If you can't see success, you can't learn from it
- If you can't recognize failure, you can't correct it
- If you can demonstrate results, you can win public support

Additionally, a performance management process should be developed to:

- Improve the management of IT investment decisions
- Maximize IT's contributions to the State and/or Organization's mission
- Demonstrate value of IT to the State and/or Organization mission
- Leverage IT related best practices across state government

The process that the Performance Management Committee followed in developing these Guides is identified in the following chart.



Steps

1) What do we want/need to measure? Need to:

- Understand information needs
- Understand what you are trying to achieve and how it will be achieved
- Involve people who have experience in performance management
- Look at other organizations that have experience
- Manage expectations (what are we trying to accomplish?)
- Do a pilot to gain experience

2) Where do the measures exist or where should we collect them?

- A crosswalk is being completed, or performed to help answer this question. This discussion needs to take place in coordination with other Project Management Steering Committee (PMSC) sub-committees.

3) The performance management process must be able to:

- Compare actual financial and project performance to predefined plan (please refer to the *Public Sector Balanced Scorecard* graphic on the following page)
- Identify significant (to be defined) deviations from planned
- Analyze the deviations from plan
- Provide decision-makers with explanations of deviations, their consequences, and corrective action recommendations

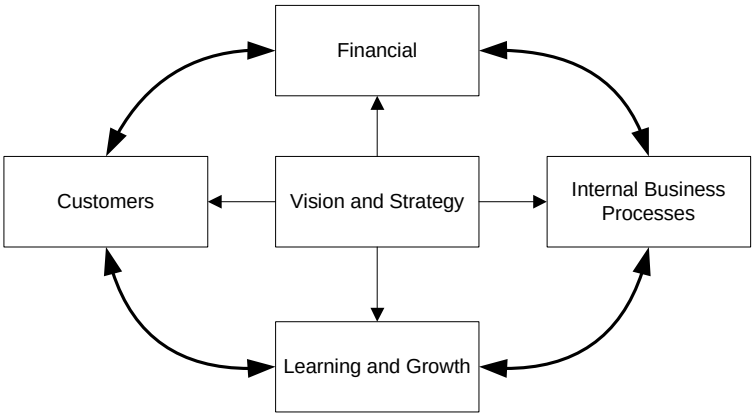
Ongoing steps in the process:

- Gather performance data on the areas of interest
- Analyze the data to determine baselines
- Determine acceptable performance thresholds
- Periodically monitor the performance data for deviations
- Report performance
- If needed, take any corrective action

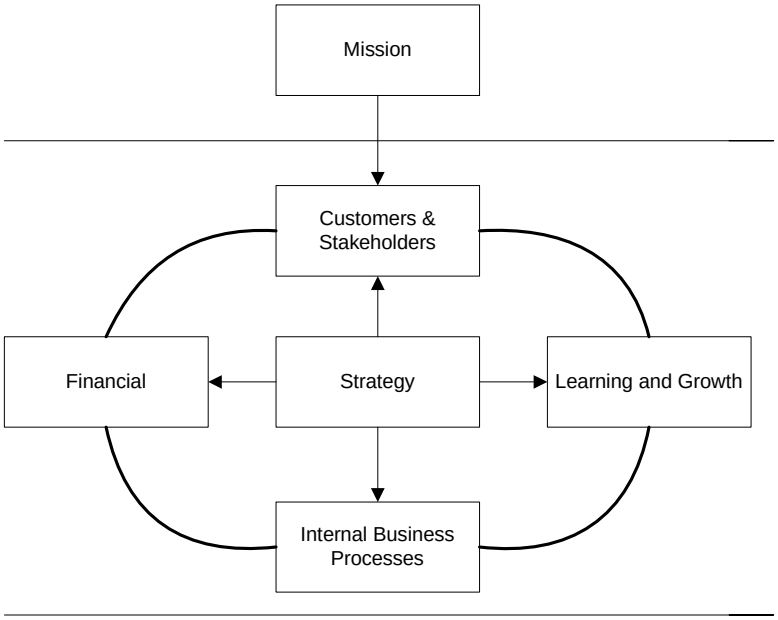
From this process the Performance Management Committee selected the Balanced Scorecard approach as an industry-recognized performance management system that helps translate mission and strategy into tangible objectives and measures. The Balanced Scorecard has proven to be a valuable tool for government and private industry organizations that wish to measure their performance against mission objectives.

The following figure illustrates the basic scorecard design and the design for a public sector scorecard system. Note that there is a change to emphasis on Mission, the key driver of a public sector organization and to the change in positions of Financial and Customer perspectives. There is also a change to the Customer perspective to Customer and Stakeholders, since the Mission drives customer requirements, which are subject to government mandate and limitations. Budget can be used in place of the Financial perspective to reflect budget formulation and execution processes associated with public accountability of funds.

Typical Balanced Scorecard



Public Sector Balanced Scorecard



The perspectives are defined as:

Financial – In government this perspective differs from the private sector in that the private sector objectives generally represent long-range targets for seeking profit. The Financial perspective in a public organization can have an enabling or constraining role but will rarely be the primary objective. Success should be measured on how effective and efficient the business meets the needs of their constituencies. Therefore this perspective emphasizes cost efficiency, that is, the ability to deliver maximum value to the customer.

Customers and Stakeholders – This perspective measures the ability of the organization to provide quality goods and services, the effectiveness of their delivery, and the overall customer service and satisfaction. Customers and stakeholders take priority over financial results in a public sector model.

Since objectives define what we plan to do to satisfy our stakeholders' and customers' needs an initial step is to identify the stakeholders and customers and define their expectations of the IT investment. An investment can be a technical success, but if it does not produce results that customers and stakeholders value, it will not be implemented. It is important to determine whether any of the stakeholders or customers has any organizationally related vested interests in the investment and that these interests be considered as their needs and expectations are defined.

Internal Business Processes – This perspective focuses on the internal business results that lead to financial success and satisfied customers. Organizations must identify the key business processes at which they must excel in order to meet their objectives. These key processes are monitored to ensure that outcomes will be satisfactory.

Learning and Growth – This perspective looks at the ability of employees, the quality of information systems, and the effects of organizational alignment in supporting accomplishment of organizational goals.

Although this Guide is focused on IT investments, the process can be used for developing measures for other business objectives with little modification. The key issue addressed in this guide is not whether the IT investment works, but whether it is providing value in line with the organization’s strategy, whether it supports the mission, and whether it delivers results. The graphic below outlines who, why, what, when, and how of the performance management process. Each of these areas is discussed following the figure.

Objective	Mission Excellence			
Who Develops Performance Measures?	Program Managers	Functional Managers	Project Managers	
Why Implement Performance Measurement?	Improve Mission Performance	Support Budget and Form 5 Submissions	Substantiate IT Requirements	Report on Success of IT Investments
What is Performance Measurement?	Process of Assessing Progress Toward Achieving Mission			
	Effectiveness (Right Thing)		Efficiency (Best Use of Resources)	
When is Performance Measurement Applied?	Capital Planning	Acquisition Management	Planning, Programming, and Budget System	
		Requirements Generation		
How do you establish Performance Measures?	Balanced Scorecard Perspectives			
	Stakeholders	Internal Business Process	Financial	
	Customer		Learning and Growth	
Outcome	Sound Investment Decisions			
	Improved Mission Performance			

Performance Measures are a key component of effective management. A continuing theme in management theory and practice is that *what gets measured is what gets attention*. Successful managers use performance measures to:

- Define business goals and objectives in clear, tangible and quantified terminology
- Develop project/activity plans designed to attain these goals and objectives
- Routinely monitor the actual performance vs. the plan
- Analyze significant performance deviations
- Advise management of situations requiring attention
- Support budget and Form 5 submissions and justifications
- Substantiate requirements for IT

- Report on the success of IT investments.

The Missouri project management and risk management processes outline the need to measure progress toward outcome goals and to undertake performance measurement of IT investments ensuring that IT investments successfully implement State Organization programs related to mission objectives. The linkage of IT investments to desired organization *outcomes* is a step beyond traditional measures that have focused on IT system *output*, e.g., cost, performance, schedule, speed of operation or response times. State Agencies should implement IT performance management, consider outcomes in acquisition decision-making, and conduct performance measurement to determine how well goals are met. As implemented within the *Missouri Project Management Best Practices* publication, State Agencies should establish processes to:

- Use performance measures in the selection of IT investments, the management of such investments, and the evaluation of the results of such investments.

- Integrate IT performance management with the processes of making budget, financial, and program management decisions within the State of Missouri. This becomes extremely critical when there are no cost savings or cost avoidances and the investment is being made solely on the anticipation of increased productivity.

- Include minimum criteria to be applied in considering whether to undertake a particular IT investment. These criteria include quantitatively expressed projected net value, risk adjusted return on investment, and specific quantitative and qualitative criteria for comparing and prioritizing alternative information systems investment projects.

- Define your customer expectations before developing your detailed measures. This helps to establish a framework for capturing these human-side expectations that are also critical to the project's success.

Performance measurement will enhance the current Missouri enterprise IT processes by helping senior managers focus on true mission impacts for proposed and existing IT investments. Funding will be directed to those systems best meeting the State Organization strategic goals and objectives, and which produce the best performance for the money spent.

Performance Management Definition

Performance Management is the use of performance measurement information to effect positive changes in organization culture, systems and processes. It provides a framework to:

- Help managers establish agreed-upon performance goals

- Allocate and prioritize resources

- Inform managers about the needs to change current policy or program directions to meet those goals

- Share results of performance in pursuing those goals

Performance Measurement is the process of assessing progress toward achieving predetermined goals, including information on the efficiency with which resources are transformed into goods and services (outputs), the quality of those outputs (how well they are delivered to customers and the extent to which customers are satisfied), outcomes (the results of a program activity compared to its intended purpose), and the effectiveness of operations in terms of their specific contributions to mission objectives.

Performance Measures are the standards used to measure success in achieving an objective. Performance measures describe the precise measurement that will generate a quantitative (or qualitative) indicator that explicitly or implicitly indicates progress towards achieving the objective.

In an IT context, performance measures provide the information you need to assess how well your IT investment supports your organization's missions, goals, and quantitative objectives.

These measures focus on achievement. Since the concern is on satisfying mission objectives, a few, well chosen measures that emphasize the vital and critical success factors of the mission are better than a large number of system-oriented output measures. Performance measures provide the means to assess effectiveness and efficiency.

Effectiveness is doing the "RIGHT" things:

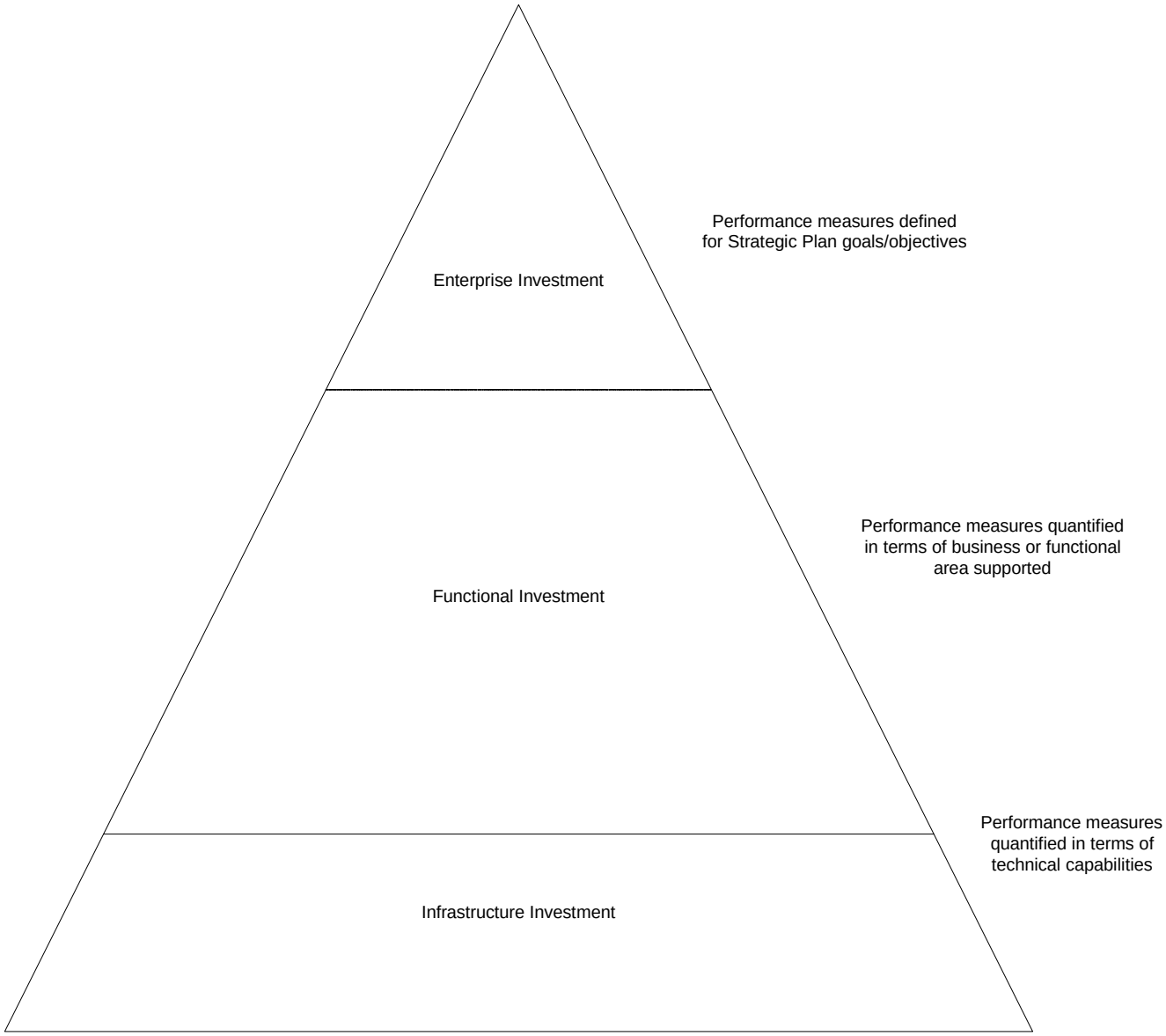
- Achievement of mission and goals
- Customer satisfaction
- Quality of work
- Appropriateness of work

Efficiency is doing things by employing the "BEST" use of available resources:

- Quantity of work
- Cost of work
- Timeliness of delivery (schedule)
- Responsiveness to changing requirements

Many managers understand that the context or level of their IT investment will drive the information requirements for their performance measures. They also know that they need to focus on the factors they can influence or control.

There is recognition that different management tiers need different types of information to make decisions. Consequently, there are three tiers or levels of performance measures defined to satisfy these needs, as illustrated below:


Performance measures defined
for Strategic Plan goals/objectives
Enterprise Investment
Performance measures quantified
in terms of business or functional
area supported
Functional Investment
Performance measures
quantified in terms of
technical capabilities
Infrastructure Investment

- **Enterprise Level Investment** – At the enterprise level, the focus is on performance measures that relate to the initiatives supporting the objectives defined in your organization's Strategic Plan. These performance measures are usually defined in terms of "outcomes" which measure the effectiveness of the initiatives in achieving the objectives. Depending on the type of the investment being measured, the enterprise level could be your organization or Statewide. At these levels, you would be focused more on the accomplishment of strategic goals than functional or operational goals. While broad in scope, these Enterprise-level performance measures have the degree of specificity needed to measure progress and success.

- **Functional Level Investment** – At the functional level the focus is on developing IT investment performance measures that quantify customer satisfaction and benefits to the business area supported by the automated information system. Typically, this is the application layer of an organization's IT investments. To be relevant, these performance measures must be defined in terms of outputs or outcomes that are meaningful to the functional or business area. The functional level is where the interests of the user community are directly represented. As the automated information system is being acquired, however, the focus is on metrics that gauge the success of the acquisition program. Traditionally these take the form of cost, schedule, and performance metrics, including earned value and many other "efficiency" metrics.

- **Infrastructure Level Investment** – IT investment performance measures at this level are normally defined in terms of customer satisfaction or "technical" outputs, outcomes or improvements, e.g., interoperability, interconnectivity, processing cycle times, Input/Output transactions, bandwidth, etc. Typically, this level represents investments in network infrastructure and the associated hardware and software. This level involves the collection of information concerning the outcome/result of the IT investment's performance in technical terms and the comparison of actual performance against projected performance for that investment. Furthermore, it calls for customer-oriented measures that assess the quality of infrastructure support.

The State of Missouri recognizes that the development of a performance management process is a long term, on going process.

Scope

The Missouri Performance Management process is being developed for utilization by all branches of state government. Any business entity with a need to conduct business with the state will be expected to conform to the performance management process and standards laid-out in this guide. All processes and standards will be published and available for review.

Approach

Both the information technology community and state government leaders have determined that performance management is a strategic issue that must be addressed. To move forward with this initiative the Office of Information Technology and the Information Technology Advisory Board authorized a committee to define a process for the gathering, updating and maintaining of performance information, how and where it will be gathered and stored, and how the information will be retrieved and used to baseline, monitor, manage, and align

performance at all levels. A number of public and private industry references were reviewed to determine the approach that best addressed the needs of the State of Missouri.

The Performance Management committee initially utilized META Group to provide input and direction. After review of the information provided from these various sources the committee decided to utilize the Department of the Navy's *Guide for Developing and Using IT Performance Measurements* as a basis for the Missouri Performance Management process. Once the process has been established a committee will be required to oversee and evolve the process.

One objective of the Performance Management Committee was to identify strategies needed for effective performance based management, evaluation, and demonstrated improvement.

Critical Success Factors

In order for a performance management program to be successful the following critical factors must be met:

- ITAB buy-in and participation – support must come from the ITAB committee for the overall performance management process.
- Organization buy-in and/or participation – the Organization must understand, accept, and participate in linking the user community needs with the needs of the Organization's strategic objectives. The Organization will also need to be flexible to allow for changes based upon mandates that are not part of the Organization's strategic objectives.
- ITAB committee/OIT oversight – create a functional (review) committee in order to communicate objectives, maintain standards, and ensure the overall success of the IT performance management program. This includes keeping metrics current with public and industry sectors and utilizing industry, information service organizations (e.g. META), and respected educational institutions for providing benchmarks to be used for comparison.
- The functional committee would be comprised of technology and business area staff.
- Subject Matter Expertise – acquire or develop in-house subject matter expertise in the collection, refinement, validation, and analysis of performance management data.
- Success Stories – identify and communicate practical examples of how the continual improvement concepts of IT performance management benefit the Agencies.
- Proven tools and methodologies – maintain a standard set of tools, benchmark data, and methodologies for IT performance management in order to ensure the credibility of analysis results and the program as a whole.
- Data repositories – identify or develop reliable repositories of IT performance management data.

Performance Management Deliverables

The development of a performance management process will result in definable products. Included in these products will be an initial set of core performance

measures. Each of the measures will be documented with a standard template that defines the measure and data required for the measure. The process for developing additional measures is contained in Part II of this manual. Other committee objectives were to:

- Identify strategies needed for effective performance based management, evaluation, and demonstrated improvement.
- Identify where and promote the collection and dissemination of project performance measures in order to provide stakeholders with information on project baselines in order to make better business decisions on future projects.
- Make performance management part of the overall project management process.

Focus

The State of Missouri recognizes that the development of a performance management process is a long term, on going process. The approach taken by the State of Missouri describes performance management as an adaptable, evolving process. The first step in this process is to focus on the core measures that have the most significant impact on the current initiatives the State is involved in. This will allow project teams to focus on those core measures and provide input to the PMSC for expanding the Performance Management process as new measures are defined.

CHAPTER 2: Performance Management Administration

Chapter 2 identifies the administration aspects of Missouri's Performance Management Program. They include Performance Management governance, roles and responsibilities, and the governance processes that will ensure performance management remains viable and supports the business of the State along with its strategic plan, project management, risk assessment, and project oversight requirements.

Performance Management Governance

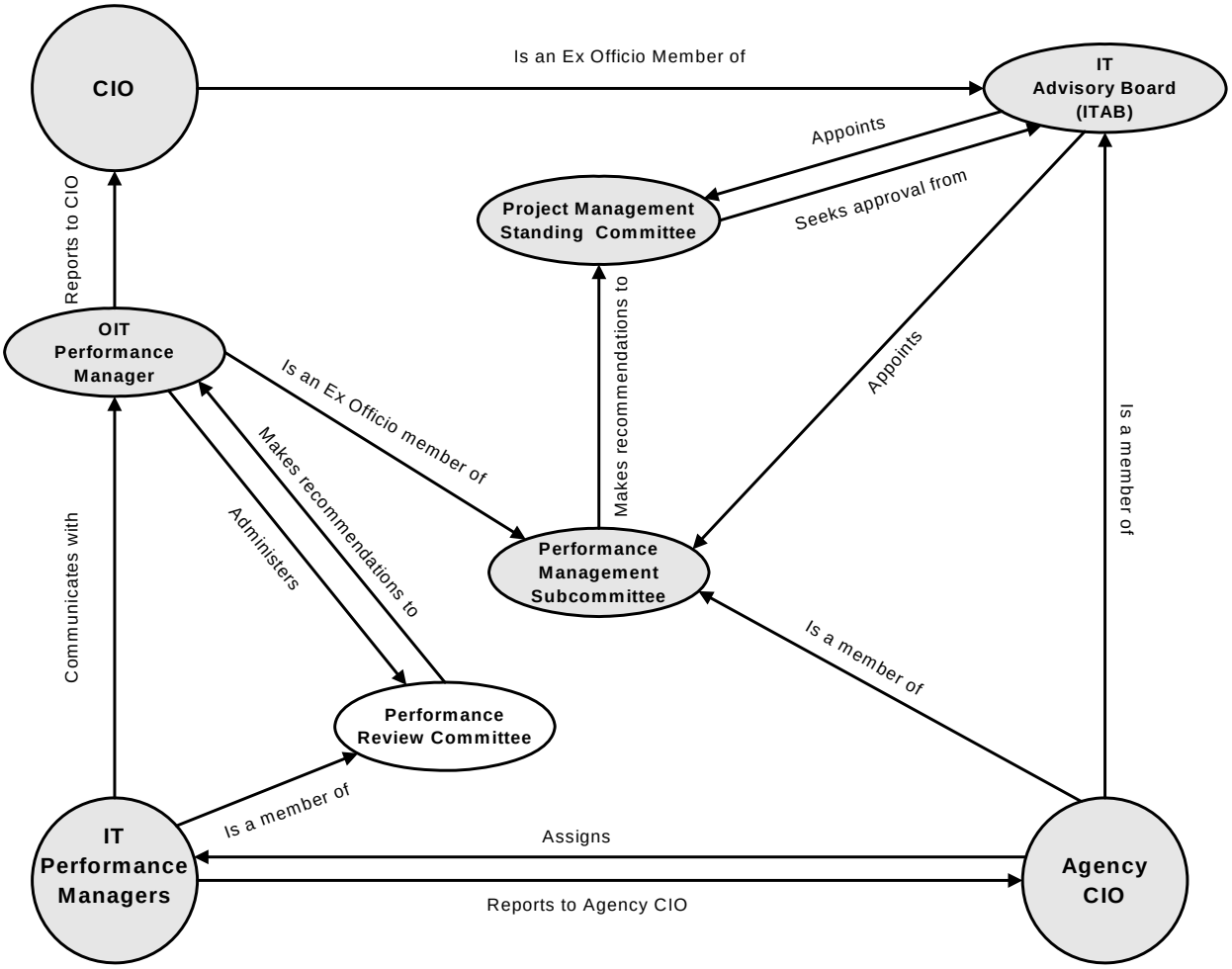
The Missouri Performance Management Program is governed by a well-defined set of roles, responsibilities, and processes. Like performance measures, these areas must be well managed to ensure the effectiveness of the overall Performance Management process. The roles include committees and executives from business and IT whose functions are strategic to the technical committees that make recommendations concerning core measures and project specific measures.

The Performance Management processes identified in this manual are an integral part of the overall IT management processes used to implement technology solutions within the state. Performance Management is closely aligned with Business Strategic Planning, IT Strategic Planning, IT deployment, Project Management, Risk Assessment, and Project Oversight.

Figure 1 illustrates the "Missouri Performance Management Governance Model" which identifies key organizational roles and management responsibilities for the Missouri Performance Management Program.

Performance Management is closely aligned with Business Strategic Planning, IT Strategic Planning, IT deployment, Project Management, Risk Management, and Project Oversight.

Figure 1.
Missouri Performance Management Governance Model



Organizational Roles & Management Responsibilities

The support of an enterprise Performance Management process requires the involvement of personnel in a variety of roles and responsibilities. The State of Missouri has identified the roles and organizational duties at both the State and organizational level, identified in Figure 2-1. The following provides a narrative description of the identified roles and responsibilities.

Performance Management Program Owner

An executive manager with authority and responsibility for the State's technology direction owns the Performance Management Program. This position exists on two levels. The State of Missouri CIO acts as the Performance Management Program Owner from an enterprise (statewide) perspective. Organization CIO's or IT directors act as the Performance Management Program Owner at the organization level.

Performance Management Program Owner Responsibilities:

- Champion the value and effectiveness of the Performance Management Program
- Ensure that the ongoing implementation of Performance Measures is successful
- Continuously demonstrate the benefits of Performance Management
- Promote understanding and acceptance of Performance Management
- Assure appropriate resources are available and assigned to Performance Management roles
- Ensure quality and currency of the Performance Measures
- Appoint a Performance Manager to oversee the use, maintenance and communication of the Performance Management Program
- Maintain particular focus on managing the Performance Management Principles

Project Management Office/Performance Manager

The Performance Manager resides within the CIO's office. This position is responsible for the use, maintenance and communication of the Performance Management process at the enterprise level.

Performance Manager Responsibilities:

- Maintain focus on managing the Performance Management Process
- Implement and manage a compliance process to ensure effective and efficient use of performance management within projects
- Oversee the vitality process to ensure the currency and accuracy of the performance measures. Refer to the *Project Management Process, Part III: Performance Management Appendices* for details on the vitality process.
- Implement and manage a communication plan

The support of an enterprise Performance Management process requires the involvement of personnel in a variety of roles and responsibilities.

- Ensure all committees function appropriately and effectively with a consistent methodology
- Maintain a liaison with other governmental entities and coordinate efforts with external standards-setting bodies
- Serves as an ex-officio member of the Performance Management subcommittee
- Provides administrative support to the Performance Management subcommittee

IT Performance Manager

The IT Performance Manager is responsible for the use and communication of the IT Performance Management program (e.g. principles, processes, components) on behalf of the Owner at the organization level. Every organization will assign an IT Performance Manager. The structure and composition of this position is up to the discretion of the IT director.

Every organization will assign an IT Performance Manager.

Agencies have the latitude to refine performance measures to be more project-specific when necessary. Agencies also can impose more restrictive time lines for compliance to meet particular needs. IT Performance Managers should also develop an enterprise view of Performance Management to ensure consistent implementation across state agencies.

<u>IT Performance Manager Responsibilities</u>:

- Establish and manage a organizational compliance process to ensure the conformance of projects to the IT Performance Management Program
- Establish and manage a communication plan within the organization
- Provide education on the IT Performance Management Process to application developers, users and management
- Establish and manage performance measures
- Establish and manage the performance management implementation plan
- Manage the physical storage and dissemination of the organizational performance measures content
- Maintain a focus on managing the Performance Management processes
- Maintain a liaison relationship with the PMO/Performance Manager

Performance Review Committee

This is a committee made up of IT Performance Managers, Budget & Finance or other business stakeholders, and the PMO/Performance Manager. This group acts as a steering committee to periodically review the IT Performance Management Program, core performance measures, and make recommendations to the Performance Management Subcommittee.

Performance Review Committee Responsibilities:

- Review Performance Management Processes annually
- Review core measures annually
- Review other IT processes such as Project Planning and Risk Management for consistency with performance management strategies
- Make recommendation to the Performance Management Subcommittee

Performance Management Subcommittee

This is a committee made up of IT Managers and CIO's and is appointed by the Information Technology Advisory Board. The Performance Management Subcommittee acts as a steering committee to periodically review the IT Performance Management Program, core measures being collected, and makes recommendations to the Project Management Standing Committee.

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Performance Management Subcommittee Responsibilities:

- Develop Performance Management Processes
- Develop a set of core measures to be managed on all projects
- Develop recommendations regarding the Performance Management Program for submission to the Project Management Standing Committee
- Assure that other IT processes such as Project Planning and Risk Management are consistent with performance management strategies

Project Management Standing Committee

This is a committee made up of IT Managers and CIO's and is appointed by the Information Technology Advisory Board. This group acts as a steering committee to periodically review the Project Management Program, and make recommendations to the Information Technology Advisory Board for final approval.

Project Management Standing Committee Responsibilities:

- Review and coordinate all recommendation made by subcommittees
- Develop final recommendations to be submitted to ITAB for final approval

- Assure that all project management processes such as project planning and risk management, performance management and project oversight are consistent with project management strategies

IT Advisory Board (ITAB)

The Information Technology Advisory Board consists of organization level CIO's or IT directors. The ITAB provides for the implementation of strategic plans and develops key IT strategies. It functions as the key contact point for project stakeholders and provides staff to committees for developing IT policy and standards.

ITAB Provides for the implementation of strategic plans and develops key it strategies.

IT Advisory Board Responsibilities:

- Ensures implementation of enterprise strategic plans
- Develops key IT Strategies
- Key contact point for project stakeholders
- Provides staff to committees for developing IT policy and standards

CHAPTER 3: Business Drivers

The business drivers are external or internal influences that significantly impact and/or set direction for programs in Missouri. Identifying and prioritizing these are the critical first step in creating the Blueprint, ensuring that the State shares a common understanding of the strategic issues and influences affecting Missouri over the next three to five years. The business drivers must then be prioritize based upon:

- Importance to the State
- Requires the State to change the way business is done
- Overall impact to Missouri, government and/or society.

Examples

Provide direct information access. Provide access to information including direct access to government information and services in response to the customer, both internal (employees) and external (citizens), requirements.

Assure accurate and timely service delivery. Improve customer service and satisfaction through delivery of measurable timely and accurate service.

Increase service delivery mechanisms. Provide increasingly varied service delivery mechanisms (e.g. self-service, face-to-face, phone, Internet) in response to customers' demands.

Provide timely access to decision support information. Provide timely access to strategic and operational decision support information. The current lack of management information hinders planning, decision making, and responsiveness.

Respond to increased competitive pressures. Respond to increased competitive pressures from private companies and other public agencies.

Accomplish more work with fewer resources. "Do more with less," in response to funding fluctuations and business cost increases. This applies to personnel resources, information systems and business processes.

Improve and maintain a results-oriented outlook. Focus on outcomes and accountability rather than processes and staff levels. Public agencies are increasingly emphasizing a results-oriented approach.

Recognize and adapt to frequent business process changes. Introduce frequent business process adjustments in response to a rapidly changing legislative and business environment.

Explore alternative funding sources. Identify alternative, sustainable funding sources such as revenue generation in response to budget uncertainties and funding decreases.

Respond to needs of a growing and diverse customer (State population) base. Provide major population segment multilingual services

CHAPTER 4: Principles

Principles

This section identifies key performance management principles. Each of the principles also contains motivation and implication statements. These statements provide rationale for adhering to the principles, serve as starting points for the evolution of the performance management process, and guide in the determination of additions or changes to the core measures.

The following performance management principles have been identified along with the motivation and implication of each. They have been grouped into related categories. These principles apply across the enterprise. As process changes occur or core measures are modified, references to these principles should be made where appropriate and conflicts should be addressed.

Performance Management Process Principles

Information Technology is an enterprise-wide resource. IT investments will be aligned with the strategic goals of the State of Missouri through the planning process. This process will include the use of performance-based management.

Motivation:

- Alignment of IT policy with agreed business goals
- Define goals in clear, tangible and quantifiable terminology
- Provides support for investment decisions
- Improve project performance

Implications:

- Need to define the Performance Management process
- Need to define, implement and evolve core measures
- Need to be integrated into the daily operations

Performance Management will support the State's long-term business strategies and plans. All performance measurement activities will comply with the performance management process.

Motivation:

- Focus resources on IT investments that are the most effective in achieving business objectives
- Enable the effective implementation of the State's business strategies

Implications:

- Must implement a process for aligning and integrating IT strategies and plans with the business
- Must be championed by senior management
- Must define and implement Performance Management processes

Performance Management is adaptive and must evolve to accommodate new and unique project requirements.

Motivation:

- Ensure IT efforts support the needs of the business
- Leverage the advantages of new technologies while balancing investments in existing systems

Implications:

- Will be reviewed and updated regularly.
- Requires definition of roles and assignment of responsibilities to ensure:
    - The business drivers are understood
    - The performance measures remain appropriate to the business drivers and the technology environment unique to the project

Performance Management is adaptive and must evolve to accommodate new and unique project requirements.

All State Information Systems that deliver products and services to stakeholders will comply with the Performance Management process.

Motivation:

- Provide a process that will:
    - Identify core measures
    - Identify methods of deriving project specific measures
    - Increase the consistency of project measurement

Implications:

- Must be championed by senior management
- Must market the value of compliance to our partners, stakeholders, and throughout the organization

Performance Measures Principles

Measures are valuable for gaining insight into project development however they are not a solution in and of themselves as they have their limitations.

Motivation:

- Identify metrics that are central to planning, tracking, and improving the development process.

Implications:

- Metrics must be used as indicators, not absolutes
- Metrics are only as good as the data that support them
- Metrics must be understood to be of value
- Metrics should not be used to judge individual's performance
- Metrics cannot identify, explain, or predict everything
- Analysis of metrics should not be performed exclusively by one source
- A single metric should not be used

Management and Organization Principles

State agencies will implement an organizational structure that supports performance management.

Motivation:

- Well defined roles and responsibilities will facilitate the process
- Communication will be enhanced

Implications:

- Resources and manpower will be committed to the process
- Agencies must coordinate activities

Accountability will be established for all projects. Accountable individuals will be responsible for following the Performance Management process for collection of core measures and the identification, implementation, and reporting of project specific measures.

Motivation:

- Ensure accountability for process
- Increase quality of IT solutions

Implications:

- Must define accountability roles and responsibilities
- Must identify individuals accountable for the process

The state agencies will actively seek opportunities to share and re-use performance measures and performance measures data.

Motivation:

- Reduce costs
- Improve project management through better baseline measures

Implications:

- Provide an enterprise level method for storing performance measurement data

- Must foster a culture of data sharing

State of Missouri data is an enterprise-wide resource. All performance data should be captured once at the point of creation and stored and managed to enable appropriate levels of sharing across the enterprise, subject to Privacy requirements.

Motivation:

- Increase consistency, share ability, and accessibility of data

Implications:

- Performance data must be treated as a statewide asset
- Need for more integrated approach to data capture
- Need to define, document, and adhere to privacy requirements

The State will promote the use of electronic data capture and encourage the use of electronic service delivery.

Motivation:

- Reduce instances of error and associated correction effort
- Increase timeliness, consistency, share ability, and accessibility of data

Implications:

- Promote the availability of electronic government services

The State will make the timely, accurate, and complete data available to our stakeholders.

Motivation:

- Increase timeliness, consistency, share ability, and accessibility of data
- Improve stakeholders confidence

Implications:

- Communicate to stakeholders what measures represent
- Communicate to stakeholders when and how data is captured and updated

Balanced Scorecard Principles

The Balanced Scorecard is a proven approach to strategic management that translates vision and strategy into a tool that effectively communicates strategic intent and motivates and tracks performance against established goals.

Motivation:

- Translate business objectives into performance measures
- Focus on the handful of measures that are most critical
- Facilitate integration and alignment of projects to common objectives

Implications:

- Translate vision and strategy into information that effectively communicates performance against goals
- Link long-term strategies to short-term actions
- Allow monitoring of business performance through the various performance perspectives

Best Practices identify industry processes related to the implementation, maintenance and expansion of performance measures.

CHAPTER 5: Best Practices

Best practices identify industry processes related to the implementation, maintenance and expansion of performance management. The best practices apply to the enterprise-wide concept of performance management. Each of the best practices also contains motivation and implication statements. They are based on experience and proven results.

Performance Management Best Practices

Leadership support and endorsement are critical for success of performance management.

Motivation:

- It is difficult to schedule time with senior leaders for input and ideas on measures.
- Leadership support is critical to success.
- Senior leaders should participate in as much of the measurement process as possible.

Implications:

- Senior leaders must communicate the importance of performance management.
- Schedule meetings in advance with senior leaders for periodic reviews of performance.
- Messages from senior leadership about the measurement initiative are distributed to stakeholders and customers concerning the purpose of performance management.

Performance Measures Best Practices

Establish a Clear Case for Performance Measures

Motivation:

- Personnel view performance measures as "just another job added to the workload" without a clear rational to justify its purpose.
- Performance measurement requires resource commitment.

Implications:

- Senior leadership must provide a clear case for performance measurement.
- The use of the performance measurement process must be enforced.
- Performance measures become a core function of IT

Performance measurement terms must be clearly defined.

Motivation:

- Lack of agreement on score card and performance measurement terminology
- There is more than one definition for the same measurement term.
- In the absence of shared definitions misunderstandings will abound.

Implications:

- Definitions of terms must be agreed upon and documented.
- Include definitions in scorecard software or web based display tool.

Focus must be on measurement, not on the technology to report measurement.

Motivation:

- Organizations get sidetracked on acquisition of software applications and systems to display performance.
- Software implementation can become burdensome and cause people to lose interest in performance measurement.

Implications:

- Performance measurement systems should help simplify and speed up the measurement and data collection process.
- Emphasis should be on developing effective performance measures not on high cost software systems.

Focus must be on measurement, not on the technology to report measurement.

Measures are linked to the organization's strategy.

Motivation:

- Performance measures are often developed in isolation.
- Measures are developed to identify technical function only.

Implications:

- Measures indicate the value of an IT solution directly related to the organization's strategy
- The systems support of the organizational mission needs to be measured.

A small number of effective metrics should be measured.

Motivation:

- Managers may not be able to dedicate time to monitoring too many or very complex metrics.
- It is difficult to implement measurement systems that are burdensome.

Implications:

- Select a few good measures that demonstrate the value of the IT investment.
- Concentrate on quality of metrics not on elaborate complicated measures.
- Measures must support the objective of the project.
- A definition of each measure is needed to ensure understanding.

Measures cover the entire project development process.

Motivation:

- All aspects of the project need to be measured which includes financial, customer, stakeholder, and internal team
- Does not just become another IT process

Implications:

- Select measures that cover the entire development process

A small number of effective metrics should be measured.

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CHAPTER 6: Technology Trends

Technology trends within the industry have an effect on the deployment of information technology. Identifying these trends and having an awareness of their impact will allow IT decision makers to develop more informed, effective decisions.

Some key questions that should be asked include the following:

- What trends and events will drive new business investment in IT?
- What technology advances or changes will impact IT deployment decision?
- How can the State exploit IT while facing a complex and volatile environment?

Technology trends identified apply to the enterprise view of performance management. Each individual domain should have technology trends identified that are specific to that domain.

Technology Trends

Technology Trend #1

A severe shortage of qualified IT professionals is resulting in stiff market competition.

- Negative trend, going to get much worse
- Need for educated and seasoned staff, not “tinkerers”
- Pace of change makes skill quickly obsolete
- Projects are staffed with external resources
- Competition for seasoned IT workers is intense

Technology Trend #2

The trend is to collect too many metrics.

- Emphasize performance outcomes, integration and collaboration rather than measurement collection and metrics databases
- Assign stakeholders to critical processes, ultimately evolving data into a value chain and a performance culture

Technology Trend #3

Current trends are to collect sound performance measures that are outcome-driven, customer focused, and multidimensional and must focus on desired results.

- Measures must determine the cause of desired result directly, rather than measuring secondary results (e.g., delivered value versus lines of code produced)

- Metrics are only indicators subject to interpretation and are typically historical and contain built-in assumptions
- Measures should be leading, dynamic, navigational, and situational
- Should cover the relevant areas identified by the program scope

Technology Trend #4

Strategic business decisions often carry costly IT consequences. IT customers have always demanded results. Now they require justification before funding.

- Link measures to behaviors to improve decision making
- Measure outputs that trigger positive or good behavior
- Link measures to business benefits or measures that communicate to the business
- Commit fully to the program and analyze what is collected
- Use productivity and quality measures as leading indicators that balance financials to demonstrate the information technology organizations ability to support business strategies

Technology Trend #5

Research shows that most IT organizations have plans that do not extend past the current budget time frame. Information technology organizations need to build closed-loop management processes that apply measurement techniques to improve performance and enables information technology organizations to become more agile and to more rapidly respond to business changes.

- Map IT measures to business strategy
- Map information technology organization and organizational capabilities to goals
- Manage metrics selection
- Build scorecards, and report cards that are actionable
- Mature best practices
- Raise organizational performance levels for efficiency, agility, growth, etc.

Technology Trend #6

Other trends relating to performance management software and storage of performance data that need to be considered are:

- Advances in storage technology has made it possible to collect enormous amounts of data.
- Advances in servers help process this data with sophisticated algorithms that can interpret the data in near real time.
- Internet-based software tools make it possible to access data anywhere in the world without having to solve complex integration issues.
- Many organizations now have an application infrastructure that captures all of the data supporting and created by key business processes.
- Further out, look for wireless technology to push enterprise performance management (EPM) indicators and alerts to cell phones and hand-held devices. Before organizations can take advantage of any of these advances in technology, they must first embark on the EPM journey.

CHAPTER 7: Conclusion

One motivation for establishing Performance Management is the use of performance measurement information to effect positive change in organization culture, systems and processes. It provides a framework to help managers establish agreed-upon performance goals, allocate and prioritize resources, inform managers about the needs to change current policy or program directions to meet those goals, and to share results of performance in pursuing those goals. In an IT context, performance measures provide the information you need to assess how well your IT investment supports your organization's missions, goals, and quantitative objectives.

Originally, metrics were the data collected after project completion to be used to plan the next project. As project management has evolved, we've learned that we can't wait until the end of a project to set thresholds and collect the data. Management needs measurement metrics early in the project that can be managed using a balanced scorecard approach, taking into consideration stakeholders, customer, internal business process, financial, and learning and growth.

In an IT context, performance measures provide the information you need to assess how well your IT investment supports your organization's mission goals, and objectives.

Two aspects of performance management that are absolutely necessary for success are a focus on decision making and collaboration. Performance management needs to be a part of an investment's strategy and execution. Measures have to be useful to decision makers for both making an investment and providing feedback as to whether the original strategy is working. It is important to involve key managers and leaders in the selection and application of performance measures.

For a metric to be effective, data must be well defined, accurate and relevant. In order to make data useful, it must be defined so things are counted the same way and can be compared to a baseline. By establishing a baseline against which to measure project performance, a team can work toward process improvements on a percentage basis.

Data must be used and presented in the right context because it can mean different things to different people involved in a project. The owner of a development project might be happy if it was completed on budget while a quality measure for a user might include the simple fact that the system is easy to use without requiring a support and maintenance team.

Start small, keeping it simple, direct and objective, and with time, you can begin to increase your analysis. Seek ways to flag problems now and avoid them in the future.

Project Management Process

Part II: Performance Management Process and Core Measures

State of Missouri
Office of Information Technology

June 3, 2004
Version 1.0

Table of Contents

PART II – Performance Management Process

Introduction

The purpose of this guide for developing and using Information Technology (IT) performance measures is to help State of Missouri technology managers develop performance measures that enable them to be more successful in their efforts to acquire, deploy, and manage IT investments. The State of Missouri Performance Management sub-committee of the Project Management Steering Committee (PMSC) selected the Balanced Scorecard approach as an industry-recognized management system that helps translate mission and strategy into tangible objectives and measures. The Balanced Scorecard has proven to be a valuable tool for government and private industry organizations that wish to measure their performance against mission objectives with the customer/stakeholder in the forefront. Although this guide is focused on IT investments, the process can be used for developing measures for other business objectives with little modification. The key issue addressed in this guide is not whether the IT investment works, but whether it is providing value in line with the organization's strategy, whether it supports the mission, and whether it delivers results.

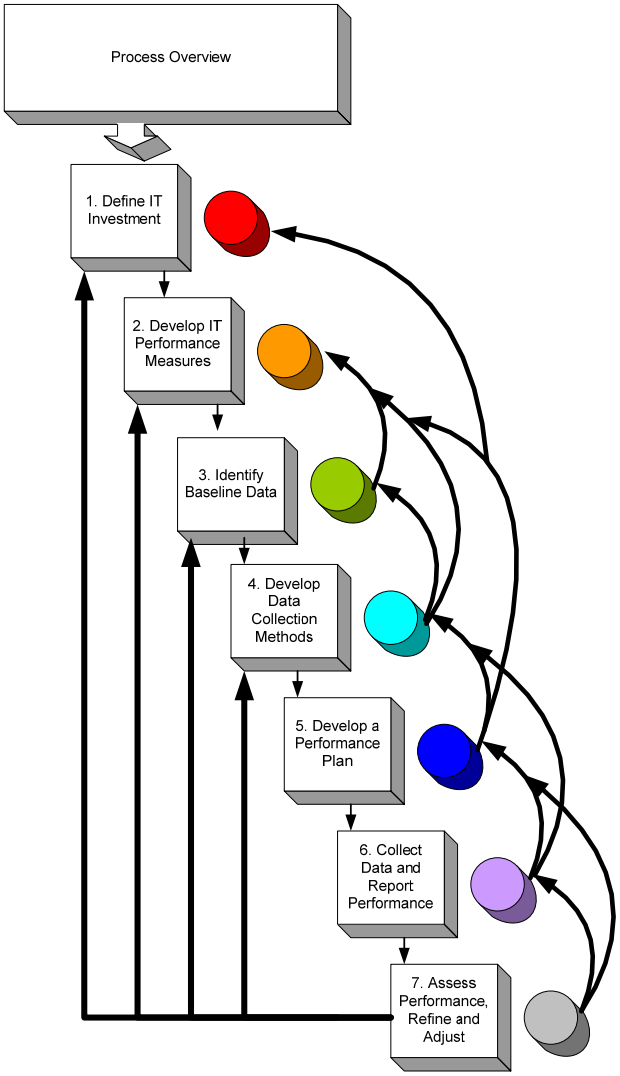
The Missouri Performance Management manual presents the approach taken to develop the Missouri Performance Management process.

This process assumes that the project team will be utilizing the Missouri Best Practices Project Management processes, including Risk Management, MOVAP, and Project Oversight. It is also assumed that the project will be led by a project manager who is a Missouri Certified and/or PMI Certified Project Manager.

In Chapter 5, core measures are identified and details on the measures provided in *Part III, Appendix D – Core Measures*. These measures are to be collected in all projects and reported along with other, project specific measures.

CHAPTER 1: Execution

The process for developing and managing IT performance measures is an iterative one that begins with the definition of the investment and involves constant refinement and management throughout the life cycle of the asset. The following graphic illustrates the process.



Steps

Step 1 – Define IT Investment. Review the Mission Need Statement, Operational Requirements Document, or other requirements documentation to understand the nature

and intent of the investment and how the investment supports the mission of the organization.

Step 2 – Develop IT Performance Measures. Develop objectives, associated measures, and actions to achieve the objectives, within each of the four Balanced Scorecard Perspectives.

Step 3 – Identify Baseline Data. Identify data that already exists and the requirements for the collection of new data that will be used to support the baseline of information required by the measures developed in Step 2.

Step 4 – Develop Data Collection Methods. Develop methods and procedures for collecting, storing, and updating the data identified in Step 3 to satisfy required reporting frequencies.

Step 5 – Develop a Performance Plan. Develop a plan that describes how the organization will review objectives and measures developed for the IT asset, and how corrective actions will be taken to achieve intended targets. Corrective actions can involve such things as modifying internal processes to more effectively use the investment or taking action to continue, modify, or cancel based on the investment's ability to meet its intended objectives.

Step 6 – Collect Data and Report Performance. Begin collecting and updating the data as determined in Step 4. The data should be displayed in a manner, and with the required frequency, to effectively evaluate actual performance of the investment in comparison to the target performance for each measure.

Step 7 – Assess Performance, Refine and Adjust. Take the corrective actions identified in the Performance Plan from Step 5 based on periodic reviews of the reports from Step 6.

Conclusion

The Balanced Scorecard, using the process described in the State of Missouri *Part I: Performance Management Process Introduction*, substantially increases the likelihood that:

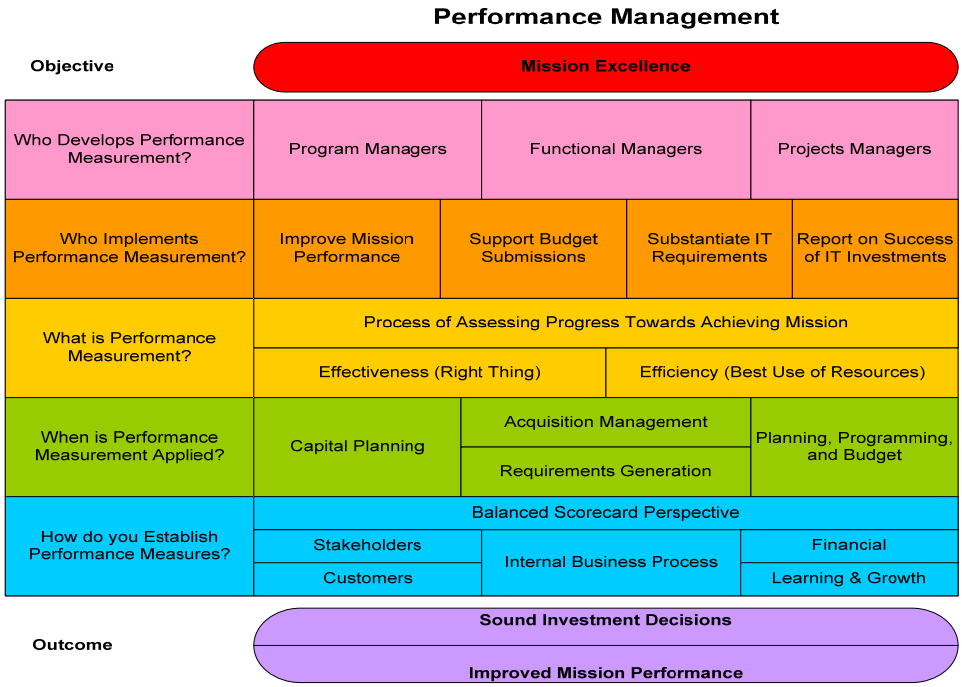
- Investments will be linked to overall mission support and improvement
- Realistic objectives will be considered for IT investments
- Actual performance of the investment will meet or exceed its intended purpose
- Corrective actions will be taken in a timely fashion if performance requirements aren't met.

It provides a model for ensuring that the investment will be continually evaluated from the perspective of the customer and the stakeholder and will also be continually evaluated from the financial perspective. The model helps ensure that objectives and measures are

evaluated relative to the perspectives of learning and growth and internal processes within the organization. From this standpoint, it is a far better method of measuring performance as compared to traditional cost and performance measures. The real value to the State of Missouri is the model's strength in increasing the probability that IT investments will lead to improved mission performance and information superiority.

CHAPTER 2: Process Review

The graphic below outlines the who, why, what, when, and how of the performance measurement process. Each of these areas is discussed in the sections on the following pages.



Who will use this Guide?

This Guide was written primarily for those who are responsible for the acquisition and deployment of IT investments and for managing operations or maintenance of IT investments. The users of this guide will benefit the most from the use of performance measures to perform the IT-related portions of their jobs. In addition, this Guide may be used by customers and stakeholders so that they may better understand their roles in quality performance management.

Why do managers use performance measures?

Performance measurement is a key component of effective management. A continuing theme in management theory and practice is that *what gets measured is what gets attention*. Successful managers use performance measures to:

- Improve mission performance

The performance measures process progresses from defining the IT investments and developing measures through using measures to improve decision making.

- Support budget submissions and justifications
- Substantiate requirements for IT
- Better communicate the success of IT investments

Many public and private organizations are moving toward processes that measure progress toward outcome goals. This is being done in order to ensure that IT investments support accomplishment of the agencies' programs, goals and objectives, i.e., mission accomplishment. The linkage of IT investments to desired organization *outcomes* is a step beyond traditional measures that have focused on IT system *output*, e.g., cost, performance, schedule, speed of operation or response times. To implement within the State of Missouri organizations should establish processes to:

- Use performance measures in the selection of IT investments, the management of such investments, and the evaluation of the results of such investments.
- Integrate IT performance measurement with the processes for making budget, financial, and program management decisions within the organization. This becomes extremely critical when there are no cost savings or cost avoidances and the investment is being made solely on the anticipation of increased productivity.
- Include minimum criteria to be applied in considering whether to undertake a particular IT investment. These criteria include quantitatively expressed projected net value, risk-adjusted return on investment, and specific quantitative and qualitative criteria for comparing and prioritizing alternative information systems investment projects.

Performance measurement will enhance the current State of Missouri enterprise IT processes by helping senior managers focus on true mission impacts for proposed and existing IT investments. Funding should be directed to those systems best meeting the State of Missouri strategic goals and objectives, and which produce the best performance for the money spent.

Part III - Performance Management Appendices contains the glossary of terms, performance management plan outline, sample measures, templates, and references used in this Guide.

What is performance management?

Performance management is the use of performance measurement information to effect positive changes in organization culture, systems and processes. It provides a framework to:

- Help managers establish agreed-upon performance goals
- Allocate and prioritize resources
- Inform managers about the needs to change current policy or program directions to meet those goals
- Share results of performance in pursuing those goals.

Performance measurement is the process of assessing progress toward achieving predetermined goals, including information on the efficiency with which resources are transformed into goods and services (outputs), the quality of those outputs (how well they are delivered to customers and the extent to which customers are satisfied), outcomes (the results of a program activity compared to its intended purpose), and the effectiveness of operations in terms of their specific contributions to mission objectives.

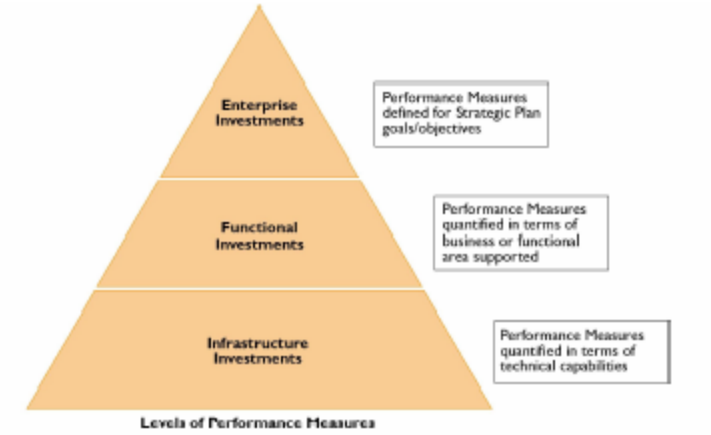
Performance measures are the standards used to measure success in achieving an objective. Performance measures describe the precise measurement that will generate a quantitative (or qualitative) indicator that explicitly or implicitly indicates progress towards achieving the objective with an emphasis on the customer/stakeholder perspective.

In an IT context, performance measures provide the information you need to assess how well your IT investment supports your organization's missions, goals, and quantitative objectives.

Performance measures focus on achievement. Since the concern is on satisfying mission objectives, a few, well chosen measures that emphasize the vital and critical success factors of the mission are better than a large number of system-oriented output measures. Performance measures provide the means to assess effectiveness and efficiency.

- Effectiveness is doing the "RIGHT" things:
    - Achievement of missions and goals
    - Customer satisfaction
    - Quality of work
    - Appropriateness of work
- Efficiency is doing things by employing the "BEST" use of available resources:
    - Quantity of work
    - Cost of work
    - Timeliness of delivery (schedule)
    - Responsiveness to changing requirements

Many managers understand that the context or level of their IT investment will drive the information requirements for their performance measures. They also know that they need to focus on the factors they can influence or control. There is recognition that different management tiers need different types of information to make business decisions. Consequently, there are three tiers or levels of performance measures defined for performance management to satisfy these needs, as illustrated below:



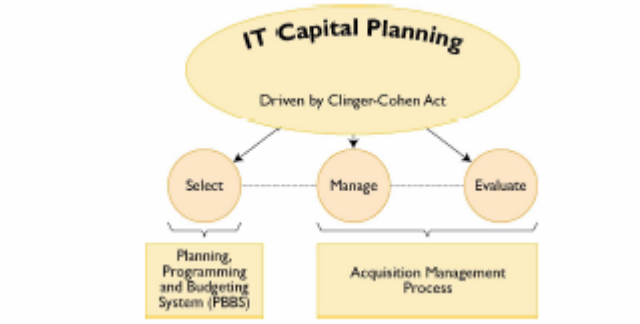
- ***Enterprise Level Investment*** – At the enterprise level, the focus is on performance measures, which relate to the initiatives supporting the objectives defined in your organization's Strategic Plan. These performance measures are usually defined in terms of "outcomes" which measure the effectiveness of the initiatives in achieving the objectives. Depending on the type of the investment being measured, the enterprise level could be your organization or the State itself. At these levels, you would be focused more on the accomplishment of strategic goals than functional or operational goals. While broad in scope, these Enterprise-level performance measures have the degree of specificity needed to measure progress and success.

- ***Functional Level Investment*** – At the functional level, the focus is on developing IT investment performance measures that quantify customer satisfaction and benefits to the business area supported by the automated system being developed. Typically, this is the application layer of an organization's IT investments. To be relevant, these performance measures must be defined in terms of outputs or outcomes which are meaningful to the functional or business area. The functional level is where the interests of the user community are directly represented. As the project is being developed, however, the focus is on the metrics that gauge the success of the program. Traditionally these take the form of cost, schedule, and performance metrics, including earned value and many other "efficiency" metrics.

- ***Infrastructure Level Investment*** – IT investment performance measures at this level are normally defined in terms of customer satisfaction or "technical" outputs, outcomes or improvements, e.g., interoperability, interconnectivity, processing cycle times, Input/Output transactions, bandwidth, etc. Typically, this level represents investments in network infrastructure and the associated hardware and software. This level involves the collection of information concerning the outcome/result of the IT investment's performance in technical terms and the comparison of actual performance against projected performance for that investment. Furthermore, it calls for customer-oriented measures that assess the quality of infrastructure support.

When are performance measures developed?

Since performance measures are used to support the selection, funding, acquisition, deployment, maintenance, and enhancement of an investment, there are a number of management processes in the project management process that require performance measures, as shown in the illustration below.



- ***During the Select phase of the IT Capital Planning process*** – The State of Missouri has adopted performance measures as one of the minimum criteria to be considered in making IT investment funding decisions. These criteria include:

  - Savings, cost avoidances, or performance improvements
  - Relevance to mission or business area goals
  - Risk, expressed as minimal Return on Investment (ROI), project longevity, or technical risk.

  During the selection phase of Capital Planning, the establishment of performance measures that support performance improvements for individual IT investments is one of the minimum criteria to be considered in deciding whether to fund an investment.

  The requirement to base IT investment funding decisions on the specified minimum decision criteria applies not only to budgeted IT investments but also to those investments which surface during execution. Decisions to fund these emergent IT investments during execution must be supported by documentation addressing the minimum criteria as the basis for funding approval.

- ***During the Manage phase of the IT Capital Planning process*** – Performance measures are used for measuring ongoing IT projects against their projected costs, schedules, and benefits and for taking action to continue, modify, or cancel them. Reviews should be performed at regular intervals during the life cycle of an IT investment to ensure that it continues to meet its mission objectives cost-effectively. The decision to continue, modify, or cancel an IT investment project should be a deliberate management decision, documented and justified by a review and analysis of the measures.

- ***During the Evaluate phase of the IT Capital Planning process*** – When managers evaluate performance, they compare actual to planned achievement, identify the reasons for variance, and identify appropriate corrective actions. For

example, during the Post Implementation Evaluation Review (PIER), which occurs during the Close-Out phase of the project management process, actual performance improvements versus those that were projected to have occurred are examined as part of the review. Performance evaluation is applied to both the initiatives taken to improve a functional area and to the actual operation or performance of the functional area. The Close-Out phase of the project management process assesses the technical and functional performance of an investment, its cost effectiveness and contribution to mission, and how well the investment was managed to delivery. IT investments should be subject to regular scrutiny through the application of performance measurements, which provide the feedback necessary to assess the continued effectiveness of the process.

- ***During the Planning, Programming, and Budgeting process*** – This is the process where the actual investment funding allocation decisions are made. As each project is reviewed at various stages during its life cycle, decisions are made regarding the future of the project. A key criterion for making these decisions is an assessment of whether the IT performance measures indicate that the investment is meeting its mission objectives. Decisions may be made which call for the suspension of funding or make future funding releases conditional on corrective actions being taken.

- ***During the Acquisition process*** – Performance measures are developed and monitored routinely by the program manager and presented during milestone reviews. If necessary, the measures are adjusted periodically to reflect realistic targets based on experience. During milestone reviews, measures are used as one of the critical factors in deciding whether to continue, modify or terminate a particular program. Therefore IT identifies that there are:

    - Clearly established measures and accountability for program progress
    - Established mission-related, outcome-based performance measures that are linked to strategic goals.

  The acquisition process is associated with the Manage phase of IT Capital Planning.

What is the Balanced Scorecard?

The Balanced Scorecard is an industry recognized management system that helps translate a business unit's mission and strategy into tangible objectives and measures. The Balanced Scorecard, developed by Kaplan and Norton of Harvard Business School, provides a framework for establishing measures that represent a balance between external measures that create value for stakeholders and customers, and internal measures necessary to sustain the unit, such as critical business processes, innovation, and learning and growth[1]. Kaplan and Norton defined four perspectives for their traditional scorecard – customers, internal business processes, financial, and learning and growth. For the government environment, many practitioners have added a fifth perspective –

stakeholders. The stakeholder perspective is necessary because of the oversight role external organizations play in many government programs. Stakeholder interests need to be addressed in order to ensure success. Definitions of these five perspectives are provided below:

Perspective	Definition
Stakeholders	The individuals or organizations that establish or influence the budget and issue or influence policy and direction for your project or your organization.
Customers	The direct recipients of your products and services.
Internal Business Processes	The processes you use to plan, manage, and perform tasks.
Financial	The processes you use to create budgets and monitor financial performance. This perspective should also include the financial results of the investment.
Learning and Growth	The developmental dimensions of the investment, e.g., improving Staff proficiency or skills, retention, training technology innovation, culture, organization, etc.

For this process we have combined the customers and stakeholders into a single scorecard perspective. Balancing objectives and measures from these four perspectives provides a greater degree of assurance that the investment will meet its intended outcomes. For example, agencies have sometimes neglected to address the actions necessary to reengineer or modify the internal processes needed to achieve the efficiencies afforded by an IT investment. In other instances, they have failed to consider the impact of the IT investment on employee training, organization, culture and morale, and other "Learning and Growth" considerations. Use of the Balanced Scorecard process will result in the development of objectives, measures, and actions within each of these four perspectives that are linked to the vision of the IT investment, which in turn will be linked to the mission and vision of the organization.

Balanced scorecard measures are usually organized into a matrix with the following headings:

Objectives	Measures	Definition	Targets	Actions

In order to populate this matrix, there are a number of terms we need to understand:

- **Objectives** define how to satisfy your stakeholders' and customers' requirements for each Balanced Scorecard perspective.
- **Measures** define how to determine achievement of the objectives or progress toward the objective.
- **Definitions** are descriptions of the measure to ensure an understanding by everyone involved of what the measure represents.
- **Targets** are the desired value or limits on value of the measure or dimension of performance.
- **Actions** are defined as those steps that must be accomplished to achieve particular outcomes.

Most managers understand the value and importance of measuring performance. The challenge is finding the time and resources to put a measurement system in place that is not only relevant to their day to day business, but also provides real visibility to their organization's performance. The Balanced Scorecard can provide that capability.

How to develop performance measures

This Guide is designed to provide the information you need to develop performance measures for your investment. To help illustrate the performance measures development process, this Guide uses an example based on an IT investment to illustrate the Balanced Scorecard process. This example is based on an initiative to implement a supply chain management solution that will ultimately consolidate several independent systems that perform procurement, material management, and inventory management functions. This example is interspersed throughout the text to highlight or enhance the processes outlined in the Guide.

Example
The text for the example will appear like this – italicized, in a white box

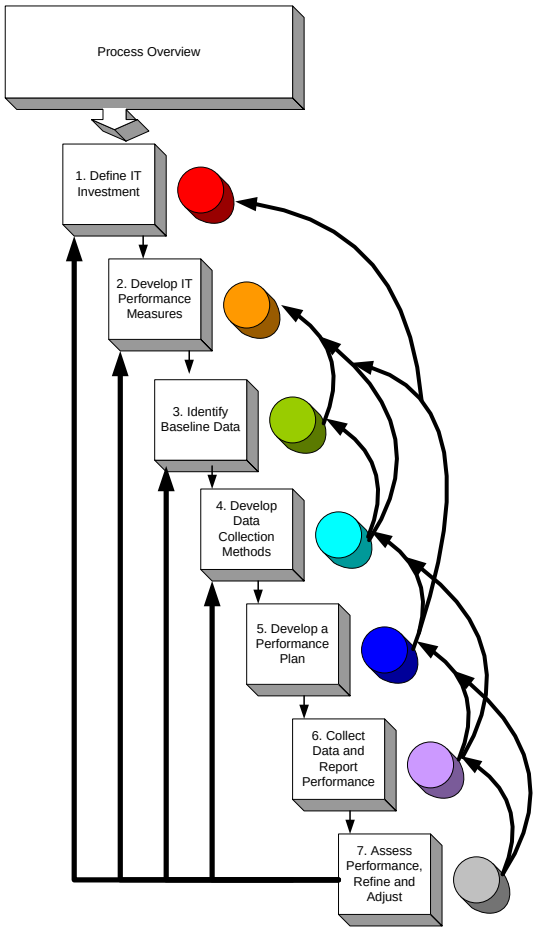
Prior to using the process for the first time, we recommend that you read the following section completely while examining how each step was executed in the example. This should provide you with sufficient background to introduce the Guide to your team and to begin developing your measures.

CHAPTER 3: Process

The purpose of this guide is to describe a process for developing, implementing and managing performance measures. It can be used for any of the tiers outlined in Chapter 2: Process Review, although our example will be at the functional level. At the functional level, the focus is on developing IT investment performance measures that quantify benefits to the business area supported by the investment. The process has been designed to engage stakeholders and senior leadership. According to most practitioners, maintaining their engagement and commitment is a critical factor in the success of any performance measurement process. One important lesson learned from many agencies is to be sure that senior leadership provides a clear case for measurement and enforces the use of the performance management process.

A recommended process for developing measures is outlined in the following graphic. It progresses from defining the investment and developing performance measures through implementing and using the measures to improve decision-making. Performance measurements should continue and be refined or adjusted through the life cycle of your IT investment. You never finish with performance measures until your IT investment ceases to exist.

The Missouri Performance Management manual presents the approach taken to develop the Missouri Performance Management process



Two aspects of performance measurement that are absolutely necessary for success are a focus on decision-making and the use of collaboration. Performance measurement needs to be a part of an investment's strategy and execution. Measures have to be useful to decision makers for both making an investment and providing feedback as to whether the original strategy is working. It is important to get key managers and leaders involved in the selection and application of performance measures.

Best practices indicate that the steps outlined for the performance measures development process are more successful when using a collaborative approach. Depending upon the complexity of the project and the level in the organizational structure, this collaboration may involve the project team, including customers and stakeholders, and selected individuals from the line organization. For functional or enterprise-level investments, this will likely require the involvement of multiple organizations, so it's important for the right people to be involved in the process.

A team approach for creating a performance measurement process enables groups to focus on:

- Achieving a common goal which leads to increased customer satisfaction with the product
- Advocating innovation, change, and results
- Capitalizing on the effectiveness of the organization
- Breaking down barriers between departments and functional specialists
- Building management commitment critical to implementation
- Empowering employees at all levels to become full partners in the decision making process
- Fostering commitment
- Helping obtain buy-in
- Promoting management and employee involvement and exchange of information.

Teamwork also is the key to building the type of leadership and user commitment needed for successful implementation of your investment. When specialists from many functional areas work together as a team, a feeling of ownership and commitment evolve, resulting in increased acceptability of the final product by customers and stakeholders. Organizations are becoming more team-oriented in structure due to downsizing and constrained resources. Effective use of teams and teamwork are important success factors in today's workplace.

Successful teams have a number of common characteristics that help them achieve their objectives, such as:

- Having a common goal, i.e., a clearly articulated and understood business problem to solve
- Having the full support of both executive leadership and management
- Having individual and team expectations and standards clearly and consistently defined
- Being equipped with a common core of skills, inherent in problem solving, benchmarking, and process improvements
- Consisting of the cross-functional skills and business knowledge that enable them to successfully address the work of the team
- Trusting each other
- Knowing everyone's role and being familiar with the responsibility of those roles
- Communicating openly and effectively
- Taking advantage of diversity
- Being recognized and rewarded

Step 1 – Define IT Investment

The first step in the IT performance measurement process is defining the investment. The investment definition captures the operating framework for the IT solution and should have a clearly defined need and set of requirements, i.e. what is the business problem that requires a solution. All investments can be related to either a financial or customer service objective. Nearly all private sector investments have a financial objective at their core. Investments are undertaken to generate revenue, increase profits, reduce costs, or capture market share. In government, where profit is not possible, investments are frequently made for other reasons. An organization such as the State of Missouri is evaluated based on its capability to perform its mission successfully, which should be related to customer service, where the customers and stakeholders determine if this objective is achieved.

To be beneficial, the IT investment should either produce financial benefits such as cost savings, cost avoidance, and productivity improvements or should contribute to improved readiness or strategic capability. If neither of these are achievable, then the investment should be reevaluated.

Your investment definition could be based on a number of different documents ranging from an investment justification, business case analysis, or Mission Needs Statement and Operational Requirements Document. Regardless of the form it takes, a clear business case and analysis should emerge and should include the following:

- The investment's linkage to strategic and business goals relating to the mission
- Definition of the current mission and IT environment
- The mission need, including the background and scope of the investment, functional concept, functional improvements, planned locations and planned mode of operations
- Mission deficiencies, including areas such as process, hardware, software, technology and policy compliance
- The impact of deficiencies on the mission
- The migration planning process
- Security, interface, and interoperability requirements
- Projected benefits, including functional benefits, business process improvements, policy and procedure changes, and other projected benefits
- Description of the Return-on-Investment (ROI) calculated by comparing the life cycle costs of the proposed system with the current system (MoVAP)
- Constraints and assumptions
- Resource requirements
- Architectural requirements

This step involves reviewing related documentation about the investment to capture the mission need and how it supports achievement of mission, strategic and business goals.

As you develop your performance measures, you will collect a wealth of information and will make a number of decisions about how the measures were constructed and what they mean. We strongly recommend that you capture this information and document these decisions as you go through the process. *Part III - Performance Management Appendices, Appendix B* contains an outline for a Performance Management Plan that provides a framework for not only documenting your entire measurement development process, but also addresses how you plan to use and manage your measures. The Appendix also provides templates for identifying the individual performance measure details and a summary of measure for the project.

Example

The manager assembled a cross-functional team and began defining the investment. She had carefully included representatives from the information systems department, accounting, and managers of the major line organizations. They reviewed the organization's strategic plan to understand how the supply chain management investment would support the organization's objectives.

Using the Balanced Scorecard methodology they identified the strategic goals related to the investment. They discovered that the organization had three significant goals that related to the investment. First was "Continually improve internal business processes," second was,"Reduce internal operating costs to allow funds to be shifted to fleet maintenance," and third was "Customer service second to none." The manager previously met with the organization's Management Team and shared their guidance with her team. The Management Team's direction was: "We have a number of challenges. We understand inventory management, procurement, delivery, and our customers. However, we are still unable to satisfy their requirements on a regular basis. We monitor our delivery times and supply availability statistics in great detail but I believe we can still improve our responsiveness.

"We need to drastically reduce operating costs while improving our ability to predict demand and deliver what our customers need when they need it. We have several IT systems that support our processes. They interface reasonably well – but we want to implement a fully integrated supply chain management system that also can be used as a catalyst to streamline our processes. I expect this IT investment to achieve our command goals of reduced operating costs and improved service."
The manager briefed her team, "I think we have an opportunity to really help the organization improve. I believe that we can use our performance measures to capture all the concerns our stakeholders and customers have and to document the success we are going to have."

The team agreed that there were a number of issues that would need to be addressed. They reviewed the requirements document and identified the following guidelines:

- Seek commercial off-the-shelf (COTS) or government off-the-shelf (GOTS) software solutions to minimize implementation time, risk, and overall cost
- Reduce cycle time and inventory stock levels
- Generate financial transactions automatically
- Provide status of checks of requisitions and shipments via the web

The manager documented this information and confirmed the requirements with senior leadership.

Step 2 – Develop IT Performance Measures

Once the investment is clearly defined, performance measures must be developed that address both the needs of the stakeholders and customers. The challenge is to keep both in mind. Balanced Scorecard measures are usually organized into a matrix with the following headings:

Objectives	Measures	Definition	Targets	Actions

The purpose of this step is to guide you through a process to fill in these blocks of the matrix. Most teams work the steps in iterative loops as they refine their understanding of the objectives and measures. *Part III - Performance Management Appendices, Appendix B* contains a Balanced Scorecard Template to assist you in documenting your objectives, measures, definitions, targets, and actions.

This step develops measures that describe how well the IT investment will meet the needs of the organization in the five areas of the scorecard.

Performance measures for an IT investment must not only provide an indication that the new or modified solution works, but that it brings value to the organization, value which is measured from the customer and stakeholder perspective. IT measures must be developed in conjunction with the documentation supporting the investment, e.g., acquisition, functional, and technical documents. As discussed in Chapters 1 and 2 of this guide, the organization's investment definition will provide much of the supporting background information needed to develop IT measures. In some cases, there will be obvious indicators about what to measure, such as when issues of time, cost and schedule are clearly delineated. In other cases, measures may need to be refined gradually over time.

Define stakeholder and customer needs

Since objectives define what we plan to do to satisfy our stakeholders' and customers' needs, the first thing we need to do is to identify our stakeholders and customers and define their needs and expectations for our IT investment. This is a very important part of the process since it focuses attention on the human aspects of stakeholders' and customers' interests in the project. An investment can be a technical success, but if it doesn't produce results that customers and stakeholders value, it will not be implemented.

It is important that you determine whether any of the stakeholders or customers

have any personal interests in the investment and that these interests be considered as you define their needs and expectations. The value of the Balanced Scorecard approach is that it establishes a framework for capturing these human-side expectations that are also critical to the project's success. In order to reduce your long-term effort in collecting and reporting data, it's important to define your customer sets and their expectations before developing your detailed measures.

Process flow for defining stakeholder and customer needs:

- Identify stakeholders and customers
- Determine their needs for this investment
- Ensure that you have assessed their needs for each Balanced Scorecard perspective
- Confirm their needs
- Establish priorities for the needs to arrive at a manageable number (no more than 2 or 3 for each perspective)

Although the process flows for defining stakeholders and customers and their needs produce similar products, most teams spend more time defining stakeholders than customers and have a greater challenge capturing stakeholder needs.

Stakeholders include individuals or organizations that establish or influence the budget and issue or influence policy and direction for your investment or your organization. Examples of stakeholders include Program Managers, Budget Officers, and Comptrollers. They may have a significantly different perspective on the investment from that of your customers. Typically, they are more interested in the effect of the investment on mission effectiveness and the overall perception of the organization's effectiveness.

Guiding questions for identifying stakeholders and their needs:

- Who outside the using organization will be most interested in the success of the investment?
- Who approves the budget?
- Who has decision or approval authority for requirement, design, development, and deployment?

For each stakeholder, define their needs and expectations as they relate to this investment for each Balanced Scorecard perspective:

- Stakeholder needs directly related to the investment
- Customer needs directly related to the investment
- Internal Business Process
- Financial
- Learning and Growth

Stakeholders will usually care most about the impact of the investment on their concerns about mission performance and finance. It is also useful to require stakeholders to address the customer viewpoint, since, in many cases, stakeholders may serve the role of representing the customer at a very high level. While stakeholders may not have specific interest in the internal business processes or learning and growth perspectives, they may have high-level interests in these areas that could impact the planning and implementation processes for the investment.

Once you have the stakeholder needs documented it is important to establish priorities for them. Most teams discover that they have a long list of needs for their stakeholders. These teams recognize that they will not be able to satisfy all of the stakeholders' needs, so they decide to focus on the needs that will have the greatest value to the stakeholders. Many practitioners find that a template similar to the one below is useful for capturing this information.

Stakeholders	Needs
Stakeholder #1	
Stakeholder #2	
Stakeholder #n	

Customers are the direct recipients of your investment's products and services. They are usually the users of the investment or the users of the investments products. Most teams find it easier to define the customers and their needs since they are also involved in the requirements for the investment.

Guiding questions for identifying customers and their needs:

- Who will use the investment?
- Who will use the products and services of the investment?
- What will they use the investment's products or services for?

For every customer, define the needs and expectations related to this investment for each of the following Balanced Scorecard perspectives:

- Customer and Stakeholder needs directly related to the investment
- Internal Business Process
- Financial
- Learning and Growth

Customers are in the best position to determine whether an investment aids in the performance of the organization's core mission. They can also provide important feedback on how an investment will affect the workforce, including long-term impact on learning and growth requirements.

Once you have the customer needs documented it is important to establish priorities for them. Most teams discover that they have a long list of needs for their customers. These teams recognize that they will not be able to satisfy all customers' needs, so they decide to focus on the needs that will have the greatest value to the customer. Many practitioners find that a template similar to the one below is useful for capturing this information.

Customers	Needs
Customer #1	
Customer #2	

Customer #n	

	Example
After defining their stakeholders and customers and prioritizing their needs, the team had the following information to incorporate into its Performance Management Plan:	
Stakeholders	***Needs***
Management Team	*IT investment contributes to mission effectiveness* *Improves ease of use* *Delivers substantial business benefit to the State of Missouri* *Ensures public funds are spent responsibly* *Needs to reduce operating costs*
Customers	***Needs/Expectations***
Organizational Users	*Want an easier way to order and track material* *Want better reporting mechanisms*
End Users	*Want better visibility of supply status* *Want better availability of materials needed to support equipment* *Want a more effective means to contact organization employees to resolve problems*
Procurement	*Want clear requirements that do not change continuously throughout the life* *of the project* *Want to enter data only once* *Want ease of use*
With this information as a foundation, the team began developing its objectives.	

Develop your objectives

Objectives describe what you will have to do to satisfy your stakeholders' and customers' needs within each Balanced Scorecard perspective. Objectives need to be focused very specifically on your stakeholder and customer needs and expectations. It is recommended that you involve some of your stakeholders and customers in this step. If they are unable to participate in the process, you must verify with them that these objectives are important.

Process flow for developing objectives:

- Develop a set of objectives that address the lists of prioritized stakeholder and customer needs for each Balanced Scorecard perspective
- Reduce the number of objectives within each perspective to no more than two or three
- Validate that the objectives are reasonable and can be performed using the Guiding Questions, given below
- Verify with stakeholders and customers that these objectives will satisfy their most important needs

Once you have developed your objectiv4es, you should prioritize them to arrive at no more than two or three objectives per Balanced Scorecard perspective. Many teams find that they want to establish objectives that satisfy every need expressed by their stakeholders and users. Then they find that multiple measures are required to document the achievement of each objective. The result of a large number of objectives and measures can make data collection and reporting a very costly and labor-intensive exercise. For example, if you have 2 objectives per perspective and 2 measures for each objective, then you will have a total of 10 measures to collect data and report. Since the goal is to have a small number of focused measures, you should limit the number of objectives you will measure.

Process flow for conducting structured interviews:

- Develop a short list of questions that focus on key information needs
- Develop a list of prospective interviewees and schedule meetings or phone calls
- Send the list of questions to the interviewees in advance, if possible
- Conduct the interviews
- Document the interviews using the list of interview questions as a format.

Many teams find that one of the more successful methods for verifying that their objectives are important to stakeholders and customers is to use a *structured interview* process. By creating a set of interview questions that will be asked of each stakeholder or customer, the team ensures that it has identified the most important needs and objectives. The list of questions also helps make the best of the interviewee's time.

First the team develops a short list of questions that will elicit the information they need. Typical interview questions include such topics as:

- How do you expect this IT investment to support the business needs of your organization?
- What mission improvements do you anticipate from this investment?
- How will this investment improve your business processes?
- What parts of this investment will have the greatest value for you?
- How will you measure the success of this investment?
- What risks would you anticipate in this implementation?

Example

The team was ready to develop their objectives. They developed the following list of prioritized objectives:
Stakeholder Objectives
Improve mission effectiveness
Ensure stakeholders are informed of implementation status
Satisfy documentation requirements established by higher authority
Customer Objectives
Ensure investment satisfies users' needs
Internal Business Processes Objectives
Use an efficient method to deploy the system
Improve supply chain operations
Financial Objectives
Deploy system within budget
Reduce operational costs for supply chain management
Learning & Growth Objectives
Increase workforce proficiency in supply chain processes
Improve staff proficiency in deployment of COTS or GOTS solutions

Develop your measures and definitions

Now that you have identified your objectives, you are ready to develop your measures. How the organization demonstrates that the IT investment meets its objectives is answered by the measures, from a customer and stakeholder perspective. A performance measure is a way of **quantifying** or **qualifying** how well the solution meets the objective. A performance measure can be something as simple as determining on a qualitative scale of one to five how employees use data from a system, or it can be considerably more detailed by compounding many measures or creating algorithms. The majority of literature about performance measures recommends that measures are best when they are simple to understand and transparent in their meaning. Some measurement specialists suggest that the guiding design principles of measurement should be that they are understandable, relevant, and achievable.

Many teams use a process flow similar to the one shown in the box to develop their initial set of measures. It provides a method for quickly creating and evaluating the first measures they develop.

Process flow for developing measures:

- Identify measures that will clearly show that the objective was achieved
- Determine whether the measures will prove that the objective has been satisfied
- Determine if the measure is technically or organizationally feasible
- Determine whether the stakeholder or customer will recognize the measure
- Evaluate the measures against the Guiding Questions
- Create the definitions while the team fully understands the intent of the measures

The measures define how you will know you have achieved those objectives. Measures can take many forms that capture information about various stages of performance. Since stakeholders are most interested in outcomes, measures

having definitions similar to the outcome, lag, and lead measures described in the following list would be appropriate. The important point is that the measure must support the objective.

Types of Measures

- **Input** – An input measure evaluates what resources or activities are required to achieve an objective, such as the number of employees certified to implement a system.
- **Output** – An output measure describes the level of work or services provided to achieve an objective, such as number of help desk responses, or number of reports created.
- **Outcome** – Outcome measures describe the actual results of a system or program. These generally relate to the intended purpose of the system or program, such as "to improve organizational effectiveness." Outcome measures can often summarize the results of many actions into one defining statement. Of course, outcome measures may be harder to define if they draw from a number of different sources of assessment (i.e. system performance and customer satisfaction).
- **Lag measures** – These are measures that typically measure accomplishments after completion. A lag measure is characterized by terminology such as project completed on a specific date, customer satisfaction is 4.5 on a scale of 5 in a survey.
- **Lead measures** – These are performance drivers that typically measure progress toward outcomes. Using our supply chain management example, a lead measure might be the level of traffic on the supply status web site. Increased usage might indicate that the system is being used regularly and might foreshadow improved visibility of supply status. In conjunction with a decrease in the number of customer service calls, these measures might foreshadow increased customer satisfaction with the supply chain management process.

Many teams find that this is an iterative process as they brainstorm for measures, and then accept, reject, or modify them. *Part III - Performance Management Appendices, Appendix C* contains a collection of examples of IT performance measures. Once the team has developed its initial set of measures, it should check them to confirm that the data will be collectible and will provide the information that will be needed to manage the investment.

Once you have defined your measures, you should write a definition of each measure to help ensure understanding by everyone

Guiding questions for identifying Evaluating measures:

- Do the measures clearly link to stakeholder and customer needs?
- Are the measures outcome-oriented?
- Are the measures quantifiable?
- Are the measures easy to gather without being caostly or labor intensive?
- Does the measure indicate how well the effort will achieve its objective?
- For your customer-related measures, are they mainly lead measures?
- Are you using a small set of significant performance measures that provide a clear basis for assessing accomplishment, facilitate decision-making, and focus on accountability?

involved with the measures and their implementation.

Prior to implementing your measures, you will need participation and cooperation from people both within and outside your organization's team. You are encouraged to involve key Subject Matter Experts (SMEs) in developing your measures and data collection methods. If this is not possible, you are strongly encouraged to circulate the measures to the people involved for comment and concurrence.

Example		
As the team began to address its measures and definitions, it checked to make sure the team included appropriate SME's. The team developed the following measures and definitions:		
Stakeholder		
Objectives	***Measures***	***Definitions***
Improve mission effectiveness	Reduced cycle time	Time between order and receipt of supply is reduced.
Ensure stakeholders are informed of implementation status		The team will brief the stakeholders to ensure they are informed of the progress of the investment.
Satisfy documentation requirements established by higher authority	Compliance with documentation requirements	???
Customer		
Objectives	***Measures***	***Definitions***
Ensure investment satisfies users' needs	Customer satisfaction with their involvement in the design. Customer satisfaction with the solution.	Involvement in the design is one of the keys to user satisfaction with the solution. During design reviews, development, and testing, users will have the opportunity to influence the solution.
Provide end users with better visibility of supply status	Improved supply status visibility.	Surveys and feedback to customer service representatives will indicate the level of success in satisfying this objective.
Improve organization responsiveness to the end user	Improved responsiveness to the end user	Surveys and feedback indicate the level of success in satisfying this objective.
Internal Business Processes		
Objectives	***Measures***	***Definitions***
Use an efficient method to deploy the system	Minimize schedule variances	A baseline schedule will be developed and variance tracked and reported.
Improve supply chain operations	Reduced procurement lead times. Reduced order to receipt elapsed time.	These two criteria have been determined to be key to customer requirements for responsiveness.
Financial		
Objectives	***Measures***	***Definitions***
Deploy system within	Minimize cost variance	A baseline schedule will be

budget		developed and variance tracked and reported.
Reduce operational costs for supply chain management	Reduced labor costs. Reduced procurement costs. Reduced shipping costs. Reduced software maintenance costs.	Baseline costs in these categories will be captured and compared to costs after deployment.
Learning and Growth		
Objectives	***Measures***	***Definitions***
Increase workforce proficiency in supply chain process	Increased knowledge of supply chain processes.	Based on before and after training assessments, organization staff display increased scores on knowledge of supply chain processes.
Improve staff proficiency in deployment of COTS or GOTS solutions.	Increased number of training courses.	Number of training courses successfully completed indicates increased knowledge and proficiency by staff.

Establish your targets

Targets represent the level of performance or the rate of change in your measures over time that you intend to attain. Targets should be reasonable and attainable. For example, establishing a target of 100% for on-time delivery when actual performance is 20% sets unrealistic expectations for the investment.

Process flow for developing targets:

- Review investment documentation to identify existing performance targets
- Establish targets
- Evaluate targets against current performance, industry benchmarks, or anecdotal information
- Revise targets, if needed, to represent a stretch goal that will reflect continuous and achievable improvements

Example		
The team established target values for its measures.		
Stakeholder		
Objectives	***Measures***	***Targets***
Improve mission effectiveness	Reduced cycle time	20% reduction.
Ensure stakeholders are informed of implementation status		Monthly
Satisfy documentation requirements established by higher authority	Compliance with documentation requirements	100% compliance.
Customer		
Objectives	***Measures***	***Targets***
Ensure investment satisfies users' needs	Customer satisfaction with their involvement in the design. Customer satisfaction with the solution.	Average score is 4 on a scale of 1 to 5. Average score is 4 on a scale of 1 to 5.
Provide end users with better visibility of supply status	Improved supply status visibility.	Average score is 4 on a scale of 1 to 5.
Improve organization responsiveness to the end user	Improved responsiveness to the end user	Average score is 4 on a scale of 1 to 5.
Internal Business Processes		
Objectives	***Measures***	***Targets***
Use an efficient method to deploy the system	Minimize schedule variances	10% maximum variance.
Improve supply chain operations	Reduced procurement lead times. Reduced order to receipt elapsed time.	5% reduction. 15% reduction.

Financial		
Objectives	***Measures***	***Definitions***
Deploy system within budget	Minimize cost variance	10% maximum variance.
Reduce operational costs for supply chain management	Reduced labor costs. Reduced procurement costs. Reduced shipping costs. Reduced software maintenance costs.	10% for all categories.
Learning and Growth		
Objectives	***Measures***	***Definitions***
Increase workforce proficiency in supply chain process	Increased knowledge of supply chain processes.	Average scores increase by 25%.
Improve staff proficiency in deployment of COTS or GOTS solutions.	Increased number of training courses.	100% of courses scheduled are completed satisfactorily.

Define your actions

Actions are the key tasks or programs required to achieve your objectives. As you develop your action lists, it's important to remember that the actions need to support the objectives and not the measures. Actions may be thought of as the detailed plan required or needed to reach the objectives. Many teams use a process similar to that outlined in the box to develop and validate their actions.

Process flow for defining actions:

- Define the actions that will be needed to achieve the objective
- Evaluate actions for relationships to the measures and targets. For those actions that support both the objective and the measure, verify that the action is primarily focused on the objective
- Review actions that only support implementation of a measure, e.g., designing and conducting a survey, to make sure the action and measure both support the objective

Once you have developed your complete Balanced Scorecard with its objectives, measures, definitions, targets, and actions, you can incorporate it into your Performance Management Plan.

Example		
The team established defined a variety of actions to achieve the objectives.		
Stakeholder		
Objectives	***Measures***	***Actions***
Improve mission effectiveness	Reduced cycle time	-Reengineer processes -Integrate systems -E-commerce
Ensure stakeholders are informed of implementation status		-Schedule formal meetings -Meet with stakeholders to determine their reporting interests -Provide reports as required
Satisfy documentation requirements established by higher authority	Compliance with documentation requirements	-Determine which documentation will be required -Incorporate documentation into project plan -Monitor production and sign-off of documentation
Customer		
Objectives	***Measures***	***Targets***
Ensure investment satisfies users' needs	Customer satisfaction with their involvement in the design. Customer satisfaction with the solution.	-Develop a satisfaction survey to accompany major events and documentation products -Ensure surveys are completed and returned -Follow-up with personal interviews for any that are

		not returned -Follow-up on any surveys with adverse comments -Develop a satisfaction survey for regular distribution
Provide end users with better visibility of supply status	Improved supply status visibility.	-Ensure surveys are completed and returned -Follow-up with personal interviews for any that are not returned -Follow-up on any surveys with adverse comments
Improve organization responsiveness to the end user	Improved responsiveness to the end user	-Develop a satisfaction survey for regular distribution -Ensure surveys are completed and returned -Follow-up with personal interviews for any that are not returned -Follow-up on any surveys with adverse comments
Internal Business Processes		
Objectives	***Measures***	***Targets***
Use an efficient method to deploy the system	Minimize schedule variances	-Use Best Practices Project Management process for solution deployment -Develop a project management plan and baseline -Obtain management approval of baseline -Track variances, document impacts and report to management
Improve supply chain operations	Reduced procurement lead times. Reduced order to receipt elapsed time.	-Collect and baseline this data for the fiscal year ending prior to implementation -Collect and baseline this data for intervening quarters -Collect and compare this data monthly
Financial		
Objectives	***Measures***	***Definitions***

Deploy system within budget	Minimize cost variance	-Develop a budget and baseline -Obtain management approval of baseline -Track variances, document impacts and report to management
Reduce operational costs for supply chain management	Reduced labor costs. Reduced procurement costs. Reduced shipping costs. Reduced software maintenance costs.	-Collect and baseline this data for the fiscal year ending prior to implementation -Collect and baseline this data for intervening quarters -Collect and compare this data monthly
Learning and Growth		
Objectives	***Measures***	***Definitions***
Increase workforce proficiency in supply chain process	Increased knowledge of supply chain processes.	-Develop user assessment instrument -90 days prior to deployment assess user skills and understanding of the process -90 days after training assess user skills and understanding of the software and the process
Improve staff proficiency in deployment of COTS or GOTS solutions.	Increased number of training courses.	-Identify relevant courses -Schedule staff for courses -Track attendance and satisfactory completion

Step 3 – Identify Data and Perform Baseline

Once the measures have been defined, it's time to determine the data requirements and sources for the information needed to satisfy the objectives and measures you have developed. Many organizations are already collecting data on their business processes and IT systems. An important element in this step is identifying data that is already available in the organization. Teams often discover that data exists that reasonably matches the data requirements for their measures.

Frequently, they adjust their measures to take advantage of data that is readily available. The Project Measurement Definition Template in *Part III - Performance Management Appendices, Appendix B* is a recommended format for defining data requirements and sources. The illustration shown below is based on the example developed in this Guide. It is keyed to a measure to "Reduce Procurement Lead Time" within the Internal Business Process Perspective and documents the sources, owners, frequency, etc., for the measurement data for this measure.

Process flow for identifying data and performing baseline:

- Determine data requirements and information sources
- Determine data availability
- Match existing data with data requirements for measures
- Document data definitions
- Collect data if available
- Document baselines

This step identifies existing sources of data and develops a baseline for assessing performance.

Measure Name: Reduce Procurement Lead Time	
Balanced Scorecard Area	***Internal Business Process Perspective***
What strategic issue is this measure designed to address?	Continually improve internal business processes. Customer service second to none.
Objective	Improve supply chain operations
Measurement Owner/point of Contact (POC)	*Name:* Mary Jones *Phone:* 555-555-1234 *E-Mail:* Mary.Jones@dept.mo.gov
Which users have access to this measure?	Item managers and procurement
How often is this measure updated?	Monthly
What is the unit of measure?	Days
Definition: Describe the measure in a manner everyone will understand.	Measures the time between the receipt of a requisition and issuance of a funded order to a vendor.
Where will the data come from?	System requisition receipt logs and procurement order logs.
List existing or supplementary reports.	Procurement Administration Lead Time Reports.

If the information is available, the team should determine whether it should baseline its measures at this time. Developing a baseline is an essential element of performance measurement. Without a baseline, goals are mere guesses. Establishing baselines primarily involves data collection and consensus building. For agencies to assess future performance, they must have a clear record of their current level of performance. Many teams decide to baseline the data that supports their measures at the end of standard time periods, such as end of month, quarter, or fiscal year.

Process flow for determining data availability include:

- What are the units of measure?
- What are the required data ranges?
- What is the frequency required?
- If the measure requires compilation of other data, what are the sub-elements needed?
- If historical data is required, is it readily available?
- Who controls the data?
- Can the data be readily obtained?

Establishing a baseline requires collecting data about current processes, work outputs and organizational outcomes. If the data is available, collect it to establish the baseline. In other instances, there are organization or industry standards related to the measures that can be used to establish the baseline. If you are automating a manual process, then capture the manual performance data and use that to establish your initial baseline.
If no baseline exists for the measures chosen, you can establish it when you collect the first sets of results data.

Step 4 – Develop Data Collection Methods

Once the measures and the data have been defined, it's time to develop the collection methods you and your team will use to collect, analyze, and report the data. Your method should provide information on the activities to be performed, resources that will be consumed, target completion dates, who will collect measurement data, who will make the decisions based on the feedback and to whom the results will be presented. *Part III - Performance Management Appendices, Appendix B* contains a template for use in developing data collection methods. This Project Measurement Definition Template provides a framework for documenting your data collection methods and processes. The collection method should ensure that the data being collected supports the measures and objectives.

Process flow for developing a data collection method:

- Identify sources of existing data for each measure
- Establish agreements with personnel to collect new data if no data currently exists
- Agree upon roles and responsibilities for data collection frequencies and reporting cycles
- Determine the impact of the data collection processes on existing operational processes
- Document the sources, systems, and personnel associated with the new or existing data
- Use automated data collection where possible
- Collect and verify data
- Evaluate relevancy and accuracy of data

This step develops the methods that will be used to collect and monitor data to determine the performance of the IT investment.

Once you've developed your method, it's useful to validate it with questions such as those in the box.

As you develop your data collection methods, it's important to remember that the data must be collected in a timely and appropriate manner that does not significantly alter existing operational processes or negatively influence those who have to collect the data. In other words, data collection should not impose so much additional work on those who have to collect the data that it becomes a detriment to the entire measurement process. If the data collection process consumes too much time by personnel, then collecting the measures may become too costly and will need to be reevaluated.

Guiding questions for validating your data collection plan:

- How is the measurement taken?
- What constraints apply?
- Who measures?
- When (how often) are the measurements taken?
- Where are the measurements results sent?
- Where are the results stored and who is the keeper?
- What is the cost of data collection?
- Will data collection significantly alter existing operational processes or negatively influence those who will have to collect the data?
- Who provide the resources to collect data?

In many organizations, the people who are responsible for collecting and reporting data take pride in their work because they see their role as the "messenger" and may be reluctant to having their duties altered. This can be a barrier to successful performance measurement because the individuals who design performance measures are often not the same people who are charged with collecting data for the measures. As a result, it will be important to consider the cultural changes that may be introduced into the organization when you develop data collection methods.

There are ways to mitigate the undesired consequences of introducing new data collection methods. One way is to involve the data collection personnel in the measurement process as early as possible. Invite them to think of new and creative ways of getting to the data quickly and painlessly. Be sure to communicate with them regularly and allow them to assist in the design and planning of the data collection method. This will encourage all personnel to feel that they are a part of an important and essential task, instead of feeling as though they are being burdened with new work. A good best practice for collecting data for measures is to clarify roles and responsibilities and ensure that the personnel collecting data understand the importance of their task.

While ease of collection, responsibilities, and costs should have been considered in the development of the measures, the process of creating the collection method makes these points more evident.

In determining who will collect the data and who it will be reported to, you may recognize that information on different measures may be collected or reported by different locations. The persons collecting the data should have both the required access and the resources to collect it. The organization receiving the report should have an interest in the investment and should have appropriate authority to respond to the reports. If you are unable to clearly identify who should receive the data reports and who has interest in them, it may be an indication that the data and measures are not relevant and should not be implemented.

Measures may be reported on a variety of schedules. Financial measures will be dependent upon financial reporting schedules, development measures will be dependent upon calendar or event completions, and operational measures will be dependent upon surveys and other information collected from users. Additionally, the recipient of the reports will have requirements for frequency. The data collection method should define the schedules for reporting the results of the data collection processes.

Example

As the team began collecting its baseline data for procurement lead time they discovered that the data currently being captured was procurement administrative lead time, which is measured from the time the requisition is received in procurement until the order is issued. This meant that the time spent by the item manager in processing the requisition, i.e., verifying that the person placing the requisition was authorized to order the item, identifying a source of supply, checking the supply system for alternates, etc., was not currently being captured. The team debated whether to change the measure or change the data definition. They also checked to determine whether the data was available for the measure as they defined it. They discovered that the data was available, although it was not being reported within the context of procurement lead-time.

As the team constructed its data collection method for this measure, they designed a way to extract this additional data and combine it with current reporting practices.

Step 5 – Develop Performance Management Plan

A Performance Management Plan describes how you plan to manage the project and how you plan to use the measures to ensure that you accomplish what's important to your stakeholders and customers. The Balanced Scorecard should provide you with cause and- effect information on how measures are linked. For example, internal process improvements may need to be made to support customer objectives. Indicators that show failure to achieve process outcomes would indicate that there could be difficulties achieving customer outcomes later on.

Process flow for developing a Performance Management Plan:

- Determine how you will manage the performance measurement process
- Review the objectives to ensure they link to stakeholder and customer needs
- Review the objectives to ensure they link to the organization's strategic goals
- Review the measures to ensure they are outcome-oriented sand will measure accomplishment of the objectives
- Determine the composition and responsibilities of the performance management organization
- Define who will use the results of the measures
- Determine how the results will be used to influence decisions
- Describe how often reviews will be conducted
- Define how often measures will be evaluated and re-evaluated
- Define how often measures will be reported and to whom
- Define how corrective actions will be taken and by whom
- Document this information into a Performance Management Plan and obtain the approval of the manager responsible for the investment

Part III - Performance Management Appendices, Appendix B contains an outline for a typical Performance Management Plan. This outline contains sections for all the information you have collected or created throughout the measures development process.

Your Plan should address how the performance measurement data will be integrated into your organization's management processes within the business and technology domains to improve decision-making. It should also address its links to MoVAP and the Form 5. The types of management processes and the management level involved depend on the scope of the investment and the measures employed.

An important function of your Plan is to describe how the results will be used. If the results aren't used, performance measures will not be taken seriously nor will they be applied effectively. Your measures should enable you to continuously evaluate, even after deployment, whether the investment meets the outcome objectives.

In Step 2, Develop IT Performance Measures, you defined your IT investment's objectives and linked them to organizational strategic and business goals. As you develop your Performance Management Plan, you may find that you need to clarify these linkages and your objectives. Coordinate with your stakeholders and customers to make sure that your plan will achieve the right set of goals.

This step develops a plan to describe how the data will be collected, evaluated, and used to make decisions.

Example
Throughout the measures development process, the team had been entering information, such as stakeholder and customer expectations and performance measures into the Performance Management Plan. Now they expanded it to ensure that all of the measurement events were planned and scheduled. The key elements they added to their Performance Management Plan in this step were: - Periodically reviewing data for relevance. - Ensuring data is collected consistently. - Capturing baseline data. - Integrating performance data into the monthly status reports. - Developing recommended activities in response to performance data. - Using the performance data to improve organizational decision-making.

Step 6 – Collect Data and Report Performance

Chances are that some amount of data will already exist for an IT system which is being modified or replaced, that describes how well the system functions or how the system impacts the organization's operations. In this case, data collection may not require significant changes to existing processes. If you are measuring the performance of a new
IT system, however, it will be necessary to begin collecting new data as outlined in Step 4, Develop Data Collection Methods. The goal of this step is to employ simple, streamlined collection methods and automate these methods as much as possible.

There are many ways of collecting data for measures, both quantitative and qualitative. How data is collected will depend on the types of measures you have selected. Qualitative measures such as user satisfaction or delivery time may require data to be gathered from stakeholder surveys, feedback forms, or interview questions. More quantitative measures may require visual observations of the systems' performance and automated system output reports. In the early stages of data collection, there will be much trial and error, and through time the bumps will be worked out. The key to success is to ensure that consistent data collections take place that demonstrate the effectiveness of the method as well as the measures. Consistency should prevail over precision until you have had time to establish data collection procedures.

Process flow for collecting data:

- Identify sources of existing data for each measure
- If no data currently exists, establish agreements with personnel to collect new data
- Agree upon roles and responsibilities for data collection frequencies and reporting cycles
- Document the sources, systems, and personnel associated with the new or existing data
- Use automated data collection where possible
- Collect and verify data
- Evaluate relevancy and accuracy of the data

This step collects data for and reports on the performance of the IT investment.

Web-based tools make data collection considerably easier because customer and user surveys and interviews can be automated and implemented in less time than

many paper methods. Many commercial off-the shelf (COTS) tools enable not only data collection, but also provide built-in data analysis tools that cut down on the time it takes to receive reports. Timing is critical because measures with long lag times – such as annual measures – lose their relevance to stakeholders. When automated data collection methods can be employed with short-cycle measures such as weekly and monthly, measures become more meaningful and more powerful as decision-making tools for leadership.

Guiding question for collecting data:

- Is the data easily accessible? If not, can it be made more accessible?
- Is the data collection so burdensome that it detracts from the purpose of measurement?
- Can data collection be streamlined or automated?
- Are a variety of data collection methods being employed?
- Does the data appear to reflect the objectives of the measures?
- Does the data collected reveal trends?
- Is the data collection process integrated with other processes?

Overall, the team should strive for consistency, timeliness and meaningful data collection.

Communicating the data is an important component of the measurement process. The needs of the organization and the audience, as well as the types of measures chosen, will influence how the measures should be visually displayed. Ultimately, the best way to display measures is in a simple and uncluttered format that allows viewers to understand at a glance whether the IT investment is meeting its objectives. Quantitative data lends itself to line charts and bar graphs. Many organizations use qualitative surveys that can be displayed in pie charts and diagrams. Color-coded displays enable users to quickly understand the performance of the investment and see if improvements need to be made. This is why so many of the performance measurement processes today use commonly understood color coding to indicate performance based on the traffic light principle (green is equal to good, yellow is neutral, and red is poor). One glance at a measure should reveal what is being measured (system performance, return on investment, or user satisfaction?) and whether investment is performing positively or negatively.

Process flow for reporting and displaying performance:

- Agree upon the audience who will view the performance measures
- Agree upon the format for individual measures
- Research and select the ideal display technology for the scoreboard
- Input measures and integrate the system with data for measures
- Test and review the scorecard process or application
- Train and inform users about the scorecard display process or application
- Establish technical support or a feedback mechanism for questions about the scorecard
- Deploy scorecard display process or application to pilot group and then expand to greater audience
- Regularly communicate and disseminate learning about the scorecard measures

Some practitioners believe that people respond to measures in one of two ways: visual displays and numeric displays. There are those who will only want to view numerical data and will instantly understand the meaning of the measure, while others will need to see a visual or written explanation. If possible, it is best to provide both types of displays for a measure. In the example of user satisfaction, the measure could be displayed with a color-coded chart indicating survey results and a short text statement summarizing the

results. It is also helpful to display a text based definition of the measure as described in Step 2, Develop IT Performance Measures.

Some useful formats for the display of measures pie and bar charts and executive dashboard arrangements.

Although there are a multitude of new technologies that enable electronic displays of scorecards, some practitioners recommend starting with a simple display and advancing once the measurements prove to be effective. This will help to prevent the organization from spending a lot of time and money creating or investing in a new technology for displaying the scorecard, instead of managing performance for results. Too many times, the performance of the technology and issues of data integration can shift focus away from the important learning that the measurement program is intended to provide. Technology is just one aspect of an effective performance management process.

Guiding questions about displaying performance measures:

- Can all of the users of the display process easily access performance data?
- Are the measures readable in a format or with an application that is shared by all the stakeholders?
- Are the displays consistent in the use of color and style?
- Is there an obvious mechanism for users of the display process to provide feedback about the measures through e-mail or dialog capability?
- Can users of the display system determine who owns the measure and can be contacted with issues, questions, and comments?
- Are definitions of the measures visible in the display process?
- Can contextual information be provided with the measures so that users can understand variances or significant changes in results?

In the early stages of measurement, it may be wise to limit the audience to whom the measures are reported and displayed. You may want to report to a small pilot group of viewers who can provide feedback about the measures before reporting the results to a larger group. That way, feedback can be integrated and adjustments can be made. When choosing the audience to receive the initial results, it will be helpful to review the questions in Step 5, Develop Performance Management Plan, of this guide such as, "who will use the results of this measure," and "how will the results of this measure be used to influence decisions?" Develop the pilot audience for reporting based on these questions and gradually increase the audience to all appropriate customers and stakeholders.

Organizations have different needs and budgetary requirements that will influence the type of performance measures display system that is right for them. There are several types of automated performance measurement applications organizations can choose from to display measures and collect and report measurement data. These include web-based, fully customized solutions, semi-custom solutions, and COTS/GOTS products. Many organizations choose to implement an automated performance application to simplify the data collection and reporting process and to share performance results with a larger audience. Web-based applications allow organizations to display performance measures to personnel in multiple remote locations. Web-based performance display products allow many stakeholders to review and monitor measures over time and also provide feedback about the measurement process. This also allows senior leaders to

assess performance measures quickly and easily, thus facilitating more informed decisions.

Customized measurement applications are of course more costly and time consuming than COTS products but they do allow the most flexibility in design and data collection options. Semi-customized solutions may be more appropriate for organizations that have complex, hard to access, data sources and must meet certain measurement design requirements within a budget. COTS solutions are a great choice for organizations that have relatively accessible data and fewer measurement design requirements. Most performance measurement applications have a variety of display features that allow users to customize their measure displays. These include the ability to view multiple graphical displays of the data such as in charts, line graphs and diagrams, and to view clusters of many measures at one time. Some measurement applications also enable users to view contextual descriptions of the measure, review background documents related to the measures, dialog about the performance, and capture real time survey data about measures.

Overall, the needs and culture of the organization will guide decisions about how to report and display performance. One thing is certain, displaying performance measures to a group of stakeholders, or to the entire organization, empowers individuals with the knowledge to make informed choices and decisions about their investments. When many people share performance information, they become more knowledgeable and conscientious custodians of IT resources. This is the goal of good performance measurement practices.

Metric data that is collected as part of this step is to be reported to the Office of Information Technology (OIT) by July 15th of each year. The Aggregated Performance Measures Template, *Part III - Performance Management Appendices, Appendix B,* should be used to report this data for each project completed.

Step 7 – Assess Performance, Refine and Adjust

Performance measures provide feedback to managers. Step 7 is a continuous process of refining and upgrading measures. Most practitioners agree that measurement systems mature over time and with learning. As data is collected, analyzed, and reported, it will shed light on progress toward achieving investment objectives. Your intuition and business sense will tell you whether the data appears accurate and reasonable, i.e., providing the information you need to manage your investment.

Once data is collected regularly for several cycles, it will be possible to see trends so that you may assess the performance of the IT investment. When assessing the performance of the IT investment, it will be necessary to frequently review the goals of the IT system as specified in Step 1, Define Investment, of this guide. You will need to regularly question and analyze the measures in light of the value the investment is bringing to the organization and determine if it is meeting its stated strategic objectives. Ongoing assessment enables you to determine the appropriateness of the measures as well as the data collection processes. As time goes on, some measures will lose their relevance. Some system enhancements or additions may prove so obvious that a smaller number of measures effectively demonstrate performance. Assessment of performance should indicate if the data being collected is accurate and timely.

Process flow for assessing the investment's performance:

- Review the data collected
- Compare it to target or benchmarks
- Evaluate the validity of the data
- Determine whether the objectives were met. If not, why?
- Evaluate whether the indicators adequately measure the results intended. If not, why?
- Assess the usefulness and timeliness of the data collected. If insufficient, what changes are necessary or what types of data are needed?
- Assess whether the staff understood their responsibilities
- Determine whether there are any lessons learned form the collection process and uses
- Determine what adjustments can and should be made to the measures, data, or baseline
- Determine the actions or changes that would improve performance

This step assesses performance of the IT investment, evaluates the measures, and develops adjustments to measures, data collection and business processes.

It will be useful to provide a feedback system to collect input from users about the learning that comes from the scorecard or performance management system. This may be accomplished using e-mail, surveys, or online collaboration, but feedback is an important aspect of performance measurement. Performance feedback enables stakeholders and users to help you evaluate the measures, determine the proper displays of measures, assess the frequencies of displays, and understand the overall performance of the IT investment. This enables continuous improvement and refinement. Without a feedback mechanism in place, there is no way for users of the performance management system to express the value of the system.

Guiding questions to help confirm the validity of the data:

- Does the data gathered appear to be accurate?
- Is the data easy to gather and not labor intensive or costly?
- Is performance really good?
- Have we selected the right performance indicators?
- Were the targets set to achieve the goals realistic?
- If the data indicates targets are successfully reached or exceeded, does that match other perceptions of the situation?
- Can adjustments be made to improve the measures?
- What adjustments are needed to the data or baseline?
- Could any changes be made to improve performance?

Feedback will help you to assess the value and validity of the measures before decisions are made, particularly in the early stages of the data collection and analysis process.

Results, particularly outcomes, rarely provide meaningful information by themselves. Results must be examined in context of the objectives, environment and external factors. Therefore after collecting the results, you should conduct measurement reviews to determine how well the indicators worked and how the results contribute to objectives. The purpose of this step is to improve the measures for the next measurement cycle, to look for ways to improve the performance of your project, and to make meaningful conclusions from the results.

Guiding questions for assessing performance:

- Does the measurement data obviously describe the performance of the investment?
- Are data collection processes streamlined? Can they be improved?
- Are there discrepancies between predicted and actual results?
- Have new data or other requirements crept into the investment?
- Have operational needs changed since the measurement process started?
- Are staff adequately trained and equipped to collect and report measurement data?
- Would you invest in this investment today?
- Do the measures provide enough information about the investment to enable informed decision-making?
- What will senior leaders say about the measures?

The measurement reviews examine the effectiveness of the chosen indicators, baseline,

and data chosen. This review is led by the appropriate level of management defined in the Performance Management Plan. It may include key stakeholders and customers as appropriate, and the team that created the indicators, if different. The review has two components. The first component evaluates the measures and data themselves.

The second component of the measurement review addresses the investments' performance based on the validated data.

Once these assessments are made, you will know whether to take actions to refine and adjust the measures, data collection methods, or process.

Process flow for refining, adjusting, and implementing:

- Continuously evaluate the appropriateness and usefulness of the data and measures
- Solicit feedback from users about the performance measures, data, and display system
- Determine if the scorecard is being used and providing value and make adjustments as necessary based on feedback
- Review the original project definition documents and assess if measurements are in line with requirements
- Use the guiding questions in this document, make adjustments to data collection, data definitions, and frequencies
- Implement appropriate corrective actions as needed

Example

One example of the measurement data collected by the team is related to the "Reduce cycle time" measure with its target of a 20% reduction. After making a number of changes in the processes as part of deploying the solution, and collecting the data for two quarters, this measure was not decreasing. The team examined the subordinate sets of data and determined that procurement lead times were actually increasing with the overall effect of preventing cycle times from being shortened. The team further researched the processes and the system operations and discovered that staff turnover had lead to a shortage of trained staff to provide back-up coverage for people who were on temporary leave. The procurement manager began an aggressive cross-training program to correct this issue.

CHAPTER 4: Process Summary

This guide was developed based on research into the subject of performance measurement practices implemented by numerous federal and defense agencies. In addition, the authors of this guide interviewed and consulted a number of subject matter experts and practitioners who have implemented performance measurement systems in their organizations. This research and collaboration revealed important insights that should be considered before developing a performance measurement or scorecard initiative. The following is a summary of observations and lessons learned about developing a performance management system:

- *Establish a Clear Case for Measurement.* Too many times, personnel view performance measurement as just another job added to the workload, without a clear rationale to justify its purpose. One important lesson reported by many organizations is to be sure that senior leadership provides a clear case for measurement and enforces the use of the performance management process.
- *Importance of leadership support and endorsement.* Much of the research about performance management indicates that leadership support is critical to success. Senior leaders should not only communicate the importance of measurement but should also participate in as much of the measurement process as possible. Many organizations report having difficulty scheduling time with senior leaders to get their input and ideas about measures. In these cases, it may be useful to block out time on their schedules in advance for periodic reviews of performance. It may also be helpful to draft a message from senior leadership about the measurement initiative to be distributed to stakeholders and users so that everyone in the organization understands the purpose of performance measurement.
- *Provide clear definitions of performance measurement terms*. A report for the US Health and Human Services revealed that one common stumbling block in the process of performance measurement is a lack of agreement on scorecard and performance terminology ("Enabling Performance Measurement Activities in the States and Communities," A Report for the U.S. Department of Health and Human Services, The Northwest Prevention Effectiveness Center and Health Policy Analysis Program, September 1998: 27). Some of the existing guides about measuring performance use more than one definition of the same term such as objective, outcome, indicator, initiative and so on. One way to avoid this confusion is to provide agreed upon and documented definitions of terms to the measurement team and to the audience using the performance results. In some cases, it may be possible to include definitions in the scorecard software or in a web based

scorecard display tool. In the absence of shared definitions and understanding about performance measurement, misunderstandings will abound.

- *Focus on measurement, not on the technology to report measurement.* Often organizations spend significant amounts of time and money on expensive software applications and systems to display performance. This can lead organizations to be sidetracked from the importance of measuring performance and improving IT acquisition practices. Two of the organizations we interviewed stated that emphasis should be placed on developing effective performance measures and not on high cost software systems. Performance measurement systems should help simplify and speed up the measurement and data collection processes. If software implementations become burdensome, it can cause people to lose interest in performance measurement and detract from the goals of the system.
- *Select a small number of measures.* Much of the research in performance measurement stresses the importance of selecting a few good measures that will demonstrate the value of the IT investment, rather than many elaborate measures. Managers may not be able to dedicate the time needed to monitor too many or very complex measures based on detailed algorithms. The GAO found that leading private organizations often started measurement initiatives with many measures, but refined and focused them over time. In the beginning of the measurement process, it may be difficult to determine which measures will be the most informative. However, with practice and time, it will become evident which measures and data collection methods are the most effective.
- *Link Measures to Strategy.* Despite the wealth of research that emphasizes the importance of creating measures that link to the organization's strategy, there is a tendency to measure a system or process in isolation. With little or no experience in performance measurement, a manager can easily measure whether or not an IT system functions effectively. Technical analysis can reveal that a system works; it turns on and off, it delivers information, and it functions consistently. Many performance measurement experts have a saying that you get what you measure, so be careful not to measure the wrong things. The key issue addressed in this guide is not whether the IT investment works, but whether it is providing value directly related to the organization's strategy, whether it supports the mission, and whether it delivers results.

CHAPTER 5: Core Measures

This chapter identifies the performance measures that all projects are to collect data for and report on. These measures were derived from the process incorporated in this guide as well as from other sources. The need for core measures is to assist in responding to questions brought forth by OA Budget and Planning and the legislature. These measures correspond to information technology measures being collected by independent technology research organizations. With these measures the State will be able to compare State performance against other governmental entities and private industry.

The core measures are related to cost, time and enterprise architecture, as follows:

On Budget – Number of projects completed within the estimated budget.
On Schedule – Number of projects completed within the estimated schedule.
Meets Customer Objectives – Number of projects meeting or exceeding customer objectives.

Please refer to *Part III, Appendix D – Core Measures* for core measure data collection details.

Project Management Process

Part III: Performance Management
Appendices

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APPENDIX A: Glossary

Terminology has been captured and defined here to further enhance the understanding of the Performance Management process. Please note that some of the following definitions relate to the Performance Management process only. For those items which are Project Management wide, definitions from the *Missouri Project Management Best Practices* and *Missouri Adaptive Enterprise Architecture, Part III Appendices* documents were used.

Actions	Defined as those key steps that must be accomplished to achieve particular outcomes.
Architecture	The art or science of designing structures. A set of designs and specifications that result in orderly arrangement of structural components.
Architecture Framework	Uniform methods for describing information systems and their performance in context with mission and functional effectiveness.
Assessment	This term used to denote the act of determining, through a review of objective evidence and witnessing the performance of activities, whether items, processes, or services meet specified requirements.
Automated Information System (AIS)	A directed, funded combination of computer hardware and software, data, information, or telecommunications that performs functions such as collecting, processing, sorting, retrieving, transmitting, and displaying information.
Balanced Scorecard	An approach to gauging the performance of an organization, project, or system that takes into account measures from four perspectives: strategic; customer satisfaction; internal business value; and innovation and learning.
Baseline	Management plan and/or scope document fixed at a specific point in time in the project life cycle. Each project is baselined at least once at the beginning. As a project evolves, it may be re-baselined.
Benchmarking	The process of comparing and measuring performance on a particular process against the

	performance of another organization's, judged to be the best of a comparable industry, performance.
Capital Planning	An integrated management process which provides for continuous identification, selection, control, life-cycle management and evaluation of IT investments with a focus on mission objectives.
Chief Information Officer (CIO)	Responsible to the head of the agency regarding acquisition of information technology and management of information resources.
Commercial Off-the-Shelf Software (COTS)	A product that is used "as-is." COTS products are designed to be easily installed and to interoperate with existing system components. Almost all software bought by the average computer user fits into the COTS category: operating systems, office product suites, word processing, and e-mail programs are among the myriad examples.
Cost Avoidance	Reduction in unbudgeted costs resulting from IT development or modernization effort.
Customers	Direct recipients of your products or services.
Definitions	Descriptions of the measure to ensure an understanding by everyone involved of what the measure represents.
Effectiveness	Doing the RIGHT things. • Achievement of missions and goals • Customer satisfaction • Quality of work • Appropriateness of Work
Efficiency	Doing things by employing the BEST use of available resources. • Quality of work • Cost of work • Timeliness of delivery • Responsiveness to changing requirements
Financial Processes	Processes you use to create budgets and monitor financial performance.
Government Off-the-Shelf Software	A product typically developed by the technical staff

	of a government agency for which it is created. It is sometimes developed by an external entity, but with funding and specification from the agency.
Information	Any communication or representation of knowledge such as facts, data, or opinions in any medium or form, including textual, numerical, graphic, cartographic, narrative, or audiovisual forms.
Information System (IS)	A discrete set of information resources organized for the collection, processing, maintenance, use, sharing, dissemination, or disposition of information to support a functional activity or process.
Information Technology (IT)	Information Technology (IT) is a term that encompasses all forms of technology used to create, store, exchange, and use information in its various forms (business data, voice conversations, still images, motion pictures, multimedia, and other forms, including those not yet conceived).
Information Technology (IT) Investment	Any development/modernization funding for any IT acquisition.
Input Measure	An input measure evaluates what resources or activities are required to achieve an objective.
Internal Business Processes	Processes you use to plan, manage, and perform tasks.
Lag Measures	Outcome measures that typically measure accomplishments after completion.
Lead Measures	Performance drivers that typically measure progress toward outcomes.
Learning and Growth	Addresses the developmental dimensions of the project, e.g., improving staff proficiency or skills, retention, training, technology innovation, culture, organization, etc.
Measures	Define how to determine achievement of or progress toward the objectives.
Mission	An enduring statement of purpose, which describes

	"what" the organization does (functions, products, and services), "who" it supports (the customers and clients), and "how" it is accomplished (the activities, technology, methods, and processes). The mission reflects the overarching critical activities of the organization.
Mission Statement	A concise statement, usually one paragraph, summarizing what the project is about and what it will accomplish.
Mission Performance	The accomplishment of program or agency goals and desired results.
Missouri Value Assessment Program (MoVAP)	An effort underway in Missouri designed to assess the value business projects bring to citizens. While some business projects will truly generate fiscal return on investment, others will only generate goodwill, i.e., better service and improved citizen satisfaction. Missouri's Value Assessment Program is designed to uncover these issues and contribute to fully informed decisions.
Objectives	Define how to satisfy your stakeholders' and customers' requirements for each Balanced Scorecard perspective.
Outcome	Outcome measures describe the actual results of a system or program.
Output	An output measure describes the level of work or services provided to achieve an objective.
Performance-Based Management	A systematic approach to performance improvement through an ongoing process of establishing strategic performance objectives; measuring performance; collecting, analyzing, reviewing, and reporting performance data; and using that data to drive performance improvement.
Performance Measure	Standard used to describe the precise measurement that will generate a quantitative (or qualitative) indicator that explicitly or implicitly indicates progress towards achieving the objective.
Performance Measurement	A process of assessing progress toward achieving predetermined goals, including information on the

	efficiency with which resources are transformed into goods and services (outputs), the quality of those outputs (how well they are delivered to customers and the extent to which customers are satisfied) and outcomes (the results of a program activity compared to its intended purpose), and the effectiveness of government operations in terms of their specific contributions to program objectives.
Performance Metric	Standard used to establish a benchmark target that is compared to actual performance. The difference between the benchmark (the plan) and the actual performance provides insight into what is working as planned and what is not.
Post Implementation Evaluation Review (PIER)	A report generated during closeout activities.
Process	The set of activities by means of which an output is achieved.
Return On Investment (ROI)	Discounted life-cycle benefits (i.e., savings or cost avoidance stream over the life-cycle), divided by discounted life-cycle costs.
Savings	Reduction in budgeted costs resulting from the IT investment.
Stakeholders	Individuals or organizational entities whose stake in the project is sufficient for them to attempt to play a role in affecting the outcome of the project.
Targets	Desired value or limits on value of the measures or dimension of performance.

APPENDIX B: Outline for a Performance Management Plan

1. Information Technology (IT) Investment Definition
This section contains the information collected when defining the IT investment. It includes the definition of the stakeholders and customers and their needs and expectations. This process is described in Step 1 of *Part II: Performance Management Process and Core Measures*.

2. Performance Measures
This section contains the Balanced Scorecard objectives, measures, definitions, targets, and actions. This process is described in Step 2 of *Part II: Performance Management Process and Core Measures*.

3. Data Identification
This section defines the data that will be required to support the measures, its sources, and its availability. If the data is baselined, that information would also be located in this section. This process is described in Step 3 of *Part II: Performance Management Process and Core Measures*.

4. Data Collection Methods
This section documents the data collection methods, including any templates or data collection tools that were used or developed. Describe the data collection process, including methods, sources, types of analysis, report types, formats, and frequencies. This process is described in Step 4 of *Part II: Performance Management Process and Core Measures*.

5. Measures Management
Describe how you plan to use the data to make decisions. This section describes how the data will be reported, to whom, how recommendations for change will be generated, evaluated, and action taken. This process is described in steps 5, 6, and 7 of *Part II: Performance Management Process and Core Measures.*

The following templates should be used as guides for identifying and recording project measures. These should be used as part of the Performance Management Plan document. The Project Measure Definition Template can be used to identify an individual measure's detail. The Aggregated Performance Measure Template can be used to summarize measures for the project. This template can be used as a summary for the Customer and Stakeholder, Financial, Internal Business, and Learning and Growth Perspective Templates, which are also shown in this appendix.

Project Measure Definition Template

The purpose of the measurement definition template is to help describe each measure in as much detail as possible. The measurement can then determine how the measures will be represented in formulas or charts. The templates can then be used to specify how the data is displayed and represented in each of these views. This is to be completed for each performance measure utilized during the project.

Measure Title:	
Balanced Scorecard Category:	
Publication/Distribution:	To: Cc:
Measurement Owner/Point of Contact:	Name: Phone: E-mail:
Measurement Definition:	
Rationale: • What strategic issue is this measure designed to address? • Objectives supported by this measure.	
Actual YTD Baseline:	
Annual Goal:	
Minimal Acceptable Performance:	
Comparative Data:	
Stretch Target:	
Reporting Frequency:	
Data Collection Source:	
Data Collection Responsibility:	
Unit of measure:	
Graphic Type:	
Scoring Criteria:	
Metric Title:	
Definition:	
Weighting Factor:	
Scoring:	
Method of Measure:	
Formula (%):	
Formula (#):	
Prerequisites:	

Template Field Definitions:

- **Measure Title** – Measure title or name.
- **Balanced Scorecard Category** – Enter the balanced scorecard category that this measure is used for: Customers & Stakeholders, Financial, Internal Business Processes, Learning and Growth.
- **Publication Distribution** – Define who the measurement information will be distributed to and how it will be reported.
- **Measurement Owner/Point of Contact** – Enter the measurement owner or contact information.
- **Measurement Definition** – Provide a definition of the measure in business terms.

- **Rationale** – Define why this measure is important, how it drives toward achieving objectives, and linkages to vision, mission, values, other perspectives, and other scorecard measure.
- **Actual YTD Baseline** – Enter the current performance level and current baseline of performance.
- **Annual Goal** – Enter the goal for the performance period.
- **Minimal Acceptable Performance** – Enter the minimal performance level accepted.
- **Comparative Data** – Provide the source of the comparable data and benchmarks.
- **Stretch Target** – Define a Stretch Target which represents a level of performance beyond the standard target goal.
- **Reporting Frequency** – Define the frequency that the measurement will be reported and the cycle time for collecting the measure.
- **Data Collection Source** – Define the data source for the measurement.
- **Data Collection Responsibility** – Define the person/title of person responsible for collecting the source data.
- **Unit of Measure** – What is the unit of measure, that is, days, hours, dollars, etc.
- **Graphic Type** – Define the type of graphic to be used to display this measurement.
- **Scoring Criteria** – Enter the values to be used for scoring this measurement and how these values are determined.
- **Metric Title** – Enter the title or name by which each related metric will be called.
- **Definition** – Provide a definition of each metric.
- **Weighting Factor** – Define what weighting factor will be used for each metric. Total of all metrics must be 100%.
- **Scoring** – Provide the red, yellow, green levels for each metric.
- **Method of Measure** – Define how this metric will be measured including origin of source data.
- **Formula (%)** – Formula for determining % of projects meeting measure.
- **Formula (#)** - Formula for determining # of projects meeting measure.
- **Prerequisites** – Identify any prerequisite items to be provided for each metric.

Single Project Formula:

$$\text{Single Project Score} = \frac{\text{Actual Score (On Time + On Budget + On Function + (5xAvailability))}}{\text{Possible Score (On Time + On Budget + On Function + (5xAvailability))}}$$

Final Measurement Formula:

$$\text{\% IT Projects Meeting Objectives} = \frac{\text{Sum of single project scores}}{\text{Total number of projects}}$$

Sample Single Project Calculation:

Project X is approved for $120,000 (E&E) and the estimated length of the project is 64 working days. There are 16 major functions listed in the project documentation and the SLA for this system provides for an availability of 2340 hours per year (45 hours/week for 52 weeks). The project was implemented on the 69th working day at a cost of $114,680 with 13 of the functions being implemented. At implementation time, the individual component metrics for Project X are calculated as:

On Time score: $OT = 1.00 – (5/64)$
$= 1.00 – 0.078$

= 0.92 (92%) [Green]

On Budget score: OB = 1.00 – 0/$120,000
= 1.00 (100%) [Green]

On Function score: OF = 1.00 - 3/16
= 1.00 – 0.19
= 0.81 (81%) [Yellow]

The IT project score for Project X is calculated as:

Meets Objectives score: = (0.92 + 1.00 + 0.81) / (1 + 1 + 1)
= 2.73 / 3
= 0.91 (91%) [Green]

At the next quarterly reporting period when the overall IS division metric was calculated, 30 working days elapsed since Project X was implemented. The SLA with the client defined the availability for those 30 days as 270 hours, but there was a 3-hour outage due to server hard drive failure and a 2-hour outage due to a virus attack, which made the solution unavailable. The Availability component metric for Project X at the quarterly reporting period is calculated as:

Availability score: AV = 1.00 – (5/270)
= 1.00 – 0.02
= 0.98 (98%) [Yellow]

The quarterly IT project score for Project X is calculated as:

Meets Objectives score: = (0.92 + 1.00 + 0.81 + 5 x (0.98)) / (1 + 1 + 1 + 5)
= 7.63 / 8
= 0.95 (95%) [Green]

<u>Adding Functionality:</u>
During the next quarter, the project X team spent $8,000 over 7 working days to have a consultant add two of the missing functions in the original project scope. The project became 12 days past time and slightly over budget. No additional downtime was recorded during the quarter, whose length was 65 working days and the SLA time was 585 hours. The second quarter measurement for project X is calculated as:

On Time score: OT = 1.00 – (12/64)
= 1.00 – 0.19
= 0.81 (81%) [Yellow]

On Budget score: OB = 1.00 – $2,680/$120,000
= 1.00 – 0.02

= 0.98 (98%) [Green]

On Function score: OF = 1.00 - 1/16
= 1.00 – 0.06
= 0.94 (94%) [Green]

Availability score: AV = 1.00 – (5/(270 + 585))
= 1.00 – 0.01
= 0.99 (99%) [Green]

The second quarter IT project score for Project X is calculated as:

Meets Objectives score: = (0.81 + 0.98 + 0.94 + (5 x .99)) / (1 + 1 + 1 + 5)
= 7.68 / 8
= 0.96 (96%) [Green]

Template for Customer and Stakeholder Perspective

Level of Investment *(circle one):* Enterprise, Functional, Project

Objectives Questions:	**Measures Questions:**	**Targets Questions:**	**Actions Questions:**
• What does the Program Documentation say will be delivered in terms of customer and stakeholder benefits? • What are the most important requirements to the customers and project sponsors? • What is most important to the employee? • What policies and practices might change as a result of implementing this new system? • How will this system help us attain our strategic objectives?	• How can the accomplishment of the objective be assessed? • How can the objective be quantified? • How can the objective be represented with units and equations? • Are the measures selected balanced across the spectrum and organization?	• What is required for the Program Documentation by the customer and stakeholder? • Does the Project spending plan conform to acquisition "best practices" for this type of effort? • Is the amount of time for this project appropriate for the type of project?	• What activities, actions, or tasks will be needed to ensure that the objective is being met? • Who needs to be involved with what component of the project review? • Who needs to be involved with what phase of the overall project?

Template for Financial Perspective

Project Level Investment

Objectives Questions:	**Measures Questions:**	**Targets Questions:**	**Actions Questions:**
• What is required in the Program Documentation in terms of financial benefits? • What are the most important financial requirements? • How can we improve productivity with this investment?	• How can the accomplishment of the objective be assessed? • How can the objective be quantified? • How can the objective be represented with units and equations?	• What is the ideal or desired state of the objective? • What does the Program Documentation or Cost Benefit Analysis require in terms of financial performance?	• What activities, actions, or tasks will be needed to ensure that the objective is being met?

Template for Internal-Business Perspective

Project Level Investment

Objectives Questions:	Measures Questions:	Targets Questions:	Actions Questions:
• What is required by the Program Documentation in terms of operational benefits? • What are the most important operational requirements? • How does the investment support the mission?	• How can the accomplishment of the objective be assessed? • How can the objective be quantified? • How can the objective be represented with units and equations?	• What is the ideal or desired state of the organization with regard to this objective? • What is required in the Program Documentation in terms of operational performance? • What State standards apply?	• What activities, actions, or tasks will be needed to ensure that the objective is being met?

Template for Learning and Growth Perspective

Project Level Investment

Objectives Questions:	**Measures Questions:**	**Targets Questions:**	**Actions Questions:**
• What is required by the Program Documentation in terms of employee or learning outcomes? • How can employee capabilities be expanded? • How can the organization leverage internal staff?	• How can the accomplishment of the objective be assessed? • How can the objective be quantified? • How can the objective be represented with units and equations?	• What is the ideal or desired state of the organization with regard to this objective? • What is required in the Program Documentation in terms of organizational learning?	• What activities, actions, or tasks will be needed to ensure that the objective is being met?

Aggregated Performance Measures Template

Customer and Stakeholder Objectives	**Measures**	**Definitions**	**Targets**	**Actions**
Internal Business Processes Objectives	**Measures**	**Definitions**	**Targets**	**Actions**
Financial Objectives	**Measures**	**Definitions**	**Targets**	**Actions**
Learning & Growth Objectives	**Measures**	**Definitions**	**Targets**	**Actions**

APPENDIX C: Sample Measures

Sample measures are provided to give you some ideas of types of measures used on various efforts. The measures you develop are important to the success of your project, program, or enterprise. You need to make sure you are measuring the right things to achieve the right targets and outcomes.

These measures are to be used as samples only and are not intended to imply they are measurements that will work with your specific effort. From Robert S. Kaplan and David P. Norton's, "Translating Strategy into Action, The Balanced Scorecard," they have seen the following measures repeatedly placed on scorecards:

Financial Measures

- Return-on-investment/economic value-added
- Profitability
- Revenue growth/mix
- Cost reduction productivity
- Decreased life cycle costs
- Cost improvements are achieved attributable to IT automation and service
- Increased Return on Investment (ROI)
- Reduced average cost of product and service
- Reduced repair cost
- Increased volume of sales for products, services, and consulting
- Meeting the net operating result target
- Sustaining/increasing employee work base
- Decreased cost per desktop application
- Decreased cost to spent ratio
- Increased cost avoidance through use of purchase card
- Increased percent of prompt pay interest paid versus total dollars disbursed
- Increased percent and cost of services provided in-house versus industry standard
- Decreased operating expenses

Customer Measures

- Market share
- Customer acquisition
- Customer retention
- Customer profitability
- Customer satisfaction
- Increased joint IT customer/supplier service level agreements
- Increased in projects using integrated project teams
- Increased service level agreements met
- Increased customers satisfied with IT problem resolution
- Increased customers satisfied with IT training
- Increased customer retention
- Recognized as a provider of choice
- Increased IT solutions supporting process improvement projects
- Decreased complaints to the help desk

- Increased new business as a result of referrals
- Increased return business
- Improved user satisfaction with process
- Increased customer base
- Increased percent of on time deliveries as defined by the customer
- Reduced percent of defective products
- Reduced percent of software modifications due to errors

Learning and Growth Measures

- Employee satisfaction
- Employee retention
- Employee productivity
- Increased number of staff trained in new technologies and techniques
- Increased staff professionally certified
- Increased IT management staff trained in management skills
- Increased IT budget devoted to training and staff development
- Increased employees skilled in advanced technology applications
- Increased number of dollars available to support advanced technology skill development
- Increased projects developed using state-of-the art methods and tools
- Improved team performance
- Increased percent of employee awards related to quality
- Increased percent of employee awards related to customer satisfaction
- Improved employee satisfaction
- Increased percentage of current competency completed and training completed
- Improved team building
- Increased capabilities and competencies of the workforce
- Increased partnering with industry and academia

Internal Business Measures

- Decreased application software failures and problems
- Increased projects on time, on budget
- Increased projects meeting functionality requirements
- Increased projects using standardization
- Increased staff trained in standards
- Reduced percent of items reworked
- Reduced cycle time
- Reduced average return time on technical support call
- Improved inventory accuracy for quantity and location
- Improved availability of valid financial information necessary to achieve financial objectives and targets related to a reduction in cost
- Increased research and development funding
- Increased Information Technology funding
- Reduced cost of doing business
- Increased system standardization
- Decreased stovepipe systems

APPENDIX D: Core Measures

This appendix provides the detailed specifications for data collection required by all technology projects. These core sets of data will be used to provide information to organization upper management, legislators, citizens, and other customers and stakeholders on technology based projects within the State of Missouri.

Core Measure – On Budget

Measure Title:	*Projects Completed On Budget*
Balanced Scorecard Category:	*Financial Objectives/Internal Business Measures*
Publication/Distribution:	To: *Stakeholders/Steering Committee/OIT* Cc: *Project Team*
Measurement Owner/Point of Contact:	*Varies by project.*
Measurement Definition:	*Measure of the amount of actual dollars spent on a project that is over the budgeted amount.*
Rationale: • What strategic issue is this measure designed to address? • Objectives supported by this measure.	*This measure addresses the budgetary aspect of a project as a means of communicating performance and value to IT clients as well as indicating the performance of IT project teams.* *This core measure is in support of Goal 2 of the Missouri Information Technology Business Plan 2003-2004.*
Actual YTD Baseline:	*Baseline is established for each year of the project. The YTD cost is used to project success of budget. FY05 is the first reporting year and will be based on industry standards.*
Annual Goal:	*Green: <10% not on budget*
Minimal Acceptable Performance:	*Yellow: >10%--<25% not on budget*
Comparative Data:	*Comparative data will be provided from industry standards.*
Stretch Target:	*<5% not on budget*
Reporting Frequency:	*Quarterly to internal stakeholders; Yearly to OIT.*
Data Collection Source:	*Varies by project.*
Data Collection Responsibility:	*Varies by project.*
Unit of measure:	*Dollars*
Graphic Type:	*Two column: project name, % within budget.*
Scoring Criteria:	*Green: 90%-100% of FY projects meet objectives* *Yellow: 75%-89% of FY projects meet objectives* *Red: <75% of FY projects meet objectives*
Metric Title:	
Definition:	*See above.*
Weighting Factor:	*20% of total score for a single IT project.*
Scoring:	*Green: <10% of budget* *Yellow: 10%-25% of budget* *Red: >25% of budget*
Method of Measure:	*Major milestones are measured until the project is implemented; then a single measurement is made at implementation time. Costs incurred after implementation to improve agreed upon functionality or availability are added to the project cost.*
Formula (%):	*OB = 100-% over budget*
Formula (#):	*OB = 1.00-($over budget/$total project budget)*
Prerequisites:	*Current project plan with resources budgeted* *Documented project approval amount*

Core Measure – On Schedule

Measure Title:	*Projects Completed On Schedule*
Balanced Scorecard Category:	*Internal Business Measures*
Publication/Distribution:	To: *Stakeholders/Steering Committee/OIT* Cc: *Project Team*
Measurement Owner/Point of Contact:	*Varies by project.*
Measurement Definition:	*Measure of the number of working days a project is behind schedule.*
Rationale: • What strategic issue is this measure designed to address? • Objectives supported by this measure.	*This measure addresses the timing aspect of a project as a means of communicating performance and value to IT clients as well as indicating the performance of IT project teams.* *This core measure is in support of Goal 2 of the Missouri Information Technology Business Plan 2003-2004.*
Actual YTD Baseline:	*FY05 is the first reporting year and will be based on industry standards.*
Annual Goal:	*Green: <10% not on schedule.*
Minimal Acceptable Performance:	*Yellow: 10%-25% not on schedule.*
Comparative Data:	*Comparative data will be provided from industry standards.*
Stretch Target:	*<5% not on schedule.*
Reporting Frequency:	*Quarterly to internal stakeholders; Yearly to OIT.*
Data Collection Source:	*Varies by project.*
Data Collection Responsibility:	*Varies by project.*
Unit of measure:	*Days*
Graphic Type:	*Two column: project name, % variance from schedule.*
Scoring Criteria:	*Green: 90%-100% of FY projects meet objectives* *Yellow: 75%-89% of FY projects meet objectives* *Red: <75% of FY projects meet objectives*
Metric Title:	
Definition:	*See above.*
Weighting Factor:	*20% of total score for a single IT project.*
Scoring:	*Green: <10% of schedule* *Yellow: 10%-25% of schedule* *Red: >25% of schedule*
Method of Measure:	*Major milestones are measured until the project is implemented; then a single measurement is made at implementation time. Time spent after implementation to improve agreed upon functionality or availability are added to the project's actual time.*
Formula (%):	*OT = 100-%behind schedule*
Formula (#):	*OT = 1.00-(days behind schedule/total project days)*
Prerequisites:	*Current project plan with resources budgeted* *Documented project approval amount*

Core Measure – Meets Customer Objectives

Measure Title:	*Meets Customer Objectives*
Balanced Scorecard Category:	*Customers & Stakeholders*
Publication/Distribution:	To: *Stakeholders/Steering Committee/OIT* Cc: *Project Team*
Measurement Owner/Point of Contact:	*Varies by project.*
Measurement Definition:	
Rationale: • What strategic issue is this measure designed to address? • Objectives supported by this measure.	*This measure addresses the expected outcomes aspect of a project as a means of communicating performance and value to IT clients as well as indicating the performance of IT project teams.* *This core measure is in support of Goal 2 of the Missouri Information Technology Business Plan 2003-2004.*
Actual YTD Baseline:	*FY05 is the first reporting year and will be based on industry standards.*
Annual Goal:	*Green: >90% of functionality/availability.*
Minimal Acceptable Performance:	*Yellow: 75%-90% of functionality/availability.*
Comparative Data:	*Comparative data will be provided from industry standards.*
Stretch Target:	*95% of functionality/availability implemented.*
Reporting Frequency:	*Quarterly to internal stakeholders; Yearly to OIT.*
Data Collection Source:	*Varies by project.*
Data Collection Responsibility:	*Varies by project.*
Unit of measure:	*% of functionality/availability implemented.*
Graphic Type:	*Two column: project name, % of functionality/availability implemented.*
Scoring Criteria:	*Green: 90%-100% of FY projects meet objectives* *Yellow: 75%-89% of FY projects meet objectives* *Red: <75% of FY projects meet objectives*
Metric Title:	*% Projects Achieving Agree-To Functionality*
Definition:	*The Agree-To Functionality component is a measure of the number of functions agreed to as being "in scope" in the project documentation that are actually implemented.*
Weighting Factor:	*10% of total score for a single IT project.*
Scoring:	*Green: 90%-100% functionality implemented* *Yellow: 75%-89% functionality implemented* *Red: <75% functionality implemented*
Method of Measure:	*Functionality is measured from the baseline of documented functions that are declared in the project's scope, generally a subset of the total functions identified on the Functional Requirements. Functionality is first measured at implementation time. Prior to implementation, no score for functionality appears in the numerator or denominator of the single IT project score. If any missing functionality is added after implementation, a new measurement is taken, along with new measurements for project cost and time.*
Formula (%):	*OF = 100-%functionality not implemented*

Formula (#):	*OF = 1.00-(# of functions not implemented/total # of functions)*
Prerequisites:	*Functional requirements document with functions itemized* *List of "in scope" functions in project documentation. Every function specifically listed is to be included in the measurement.*
Metric Title:	*% Projects Achieving Agree-To Availability*
Definition:	*The Agree-To Availability component is a measure of the percentage of time the major deliverable of a project can be utilized by the client.*
Weighting Factor:	*10% of total score for a single IT project, normalized with the other metric components by a multiplication factor of 5.0.*
Scoring:	*Green: >98% availability* *Yellow: 95%-98% availability* *Red: <95% availability*
Method of Measure:	*Availability is measured from the baseline of documented service levels that are declared in the project's scope. Availability starts at implementation time and runs continuously until the end of the measurement period, as established at project scoping. Prior to implementation no score for availability should appear in the numerator or denominator of the single IT project score.*
Formula (%):	*AV = 100-% not available*
Formula (#):	*AV = 1.00-(actual hours not available/hours available under project agreement)*
Prerequisites:	*Service level agreement with client listing agreed to hours of availability.*

APPENDIX E: Vitality Process

This chapter provides a description of all processes, templates and report examples that are part of the Performance Management Vitality Process. This is a continuous improvement process required to implement the findings and recommendations to ensure the continued viability of the performance management program.

Overview

Vitality is the method that ensures that the Performance Management processes, templates and tools remain current and accurate through an annually scheduled revision of the Performance Management methodology.

To maintain the focus of the Performance Management process regular collaboration and communications between all Project Managers and the OIT Performance Management Coordinator is necessary to review and document any potential changes to the Performance Management. The Performance Management Vitality Process ensures the actual implementation of process improvements through their inclusion in an annual update of the Performance Management.

The Performance Management Vitality sub-processes include:

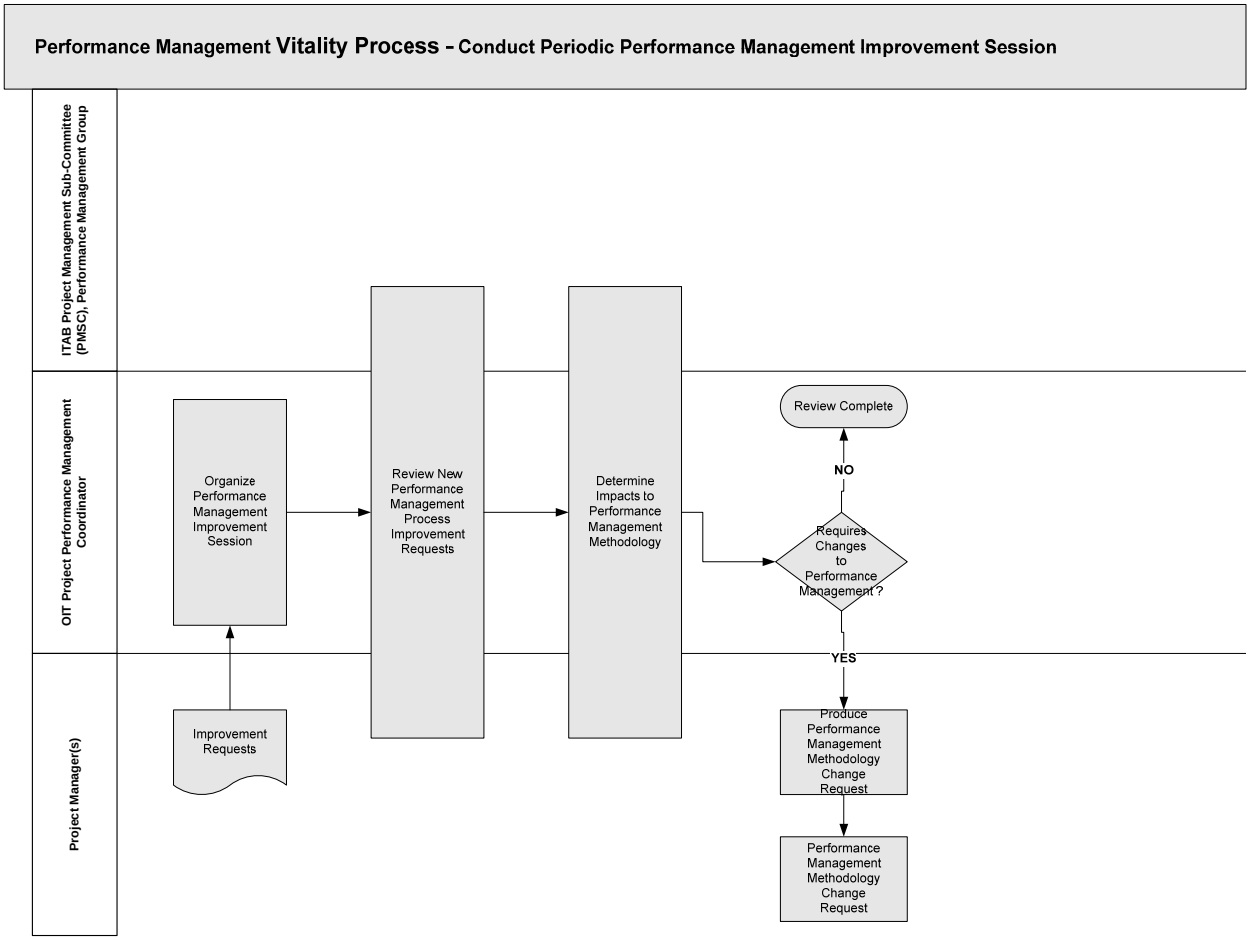
- Conduct Periodic Performance Management Improvement Sessions on as "As Needed" basis
- Perform Annual Performance Management Update

Sub-Processes and Templates

Each of the sub-processes follows the same format:

Sub-Process
- Process Model
- Process Detail
- Template (if applicable)
  - Overview
  - Sections
  - Sample Template Form
  - Template Detail

Conduct Periodic Performance Management Improvement Sessions



This sub-process is triggered by:

- The OIT Performance Management Coordinator scheduling a performance management improvement session with the Performance Management working group of the ITAB Project Management Sub-Committee (PMSC).

The Performance Management Improvement Sessions will largely be dependent upon the number of active performance management engagements and changes identified during those engagements; the more projects using performance management, the more frequent process improvement sessions are likely to occur. Meetings may also be initiated as the result of issues arising from an individual engagement that should be collectively addressed in a performance management improvement session.

Conducting periodic performance management process improvement sessions helps establish and maintain a process for making changes to the Performance Management methodology. As each active performance management engagement addresses new issues and as process

improvement reports are delivered upon project closeouts, the Performance Management methodology needs to undergo a regular review process.

The objective of each review session is to promote performance management process improvements, and increase value assessment process maturity. The Performance Management processes are implemented and executed by each of the Project Managers; their involvement in a collaborative forum, set up to share best practices and lessons-learned, is essential to successfully maturing the Performance Management.

Organized by the OIT Performance Management Coordinator, the Performance Management Improvement Sessions are designed to be an open and honest discussion of how well the entire performance management processes operates. This can include discussing the agreed nature and intent of the current processes as well as collective agreement of changes that need to be made to improve the process. Such a forum enables discussion, review, and documentation of necessary Performance Management changes to take place simultaneously.

Organize Performance Management Improvement Sessions – The OIT Performance Management Coordinator will arrange a date, time and facility for the performance management improvement session. The goal of the meeting is to discuss ways to mature the Performance Management focusing on process improvements. To ensure that potential changes do not create adverse impacts in the implementation of performance management representation is required from the ITAB Project Management Sub-Committee (PMSC) Performance Management working group.

Review New Performance Management Process Improvement Reports – Produced upon the completion of a performance management engagement, a process improvement report captures an assessment of how performance management was executed, the success and failures and lessons learned. The performance management improvement session participants will focus their review efforts on any proposed Performance Management process improvements. Project Managers should be utilized to provide feedback on how proposed changes could impact the implementation of performance management on their existing engagements.

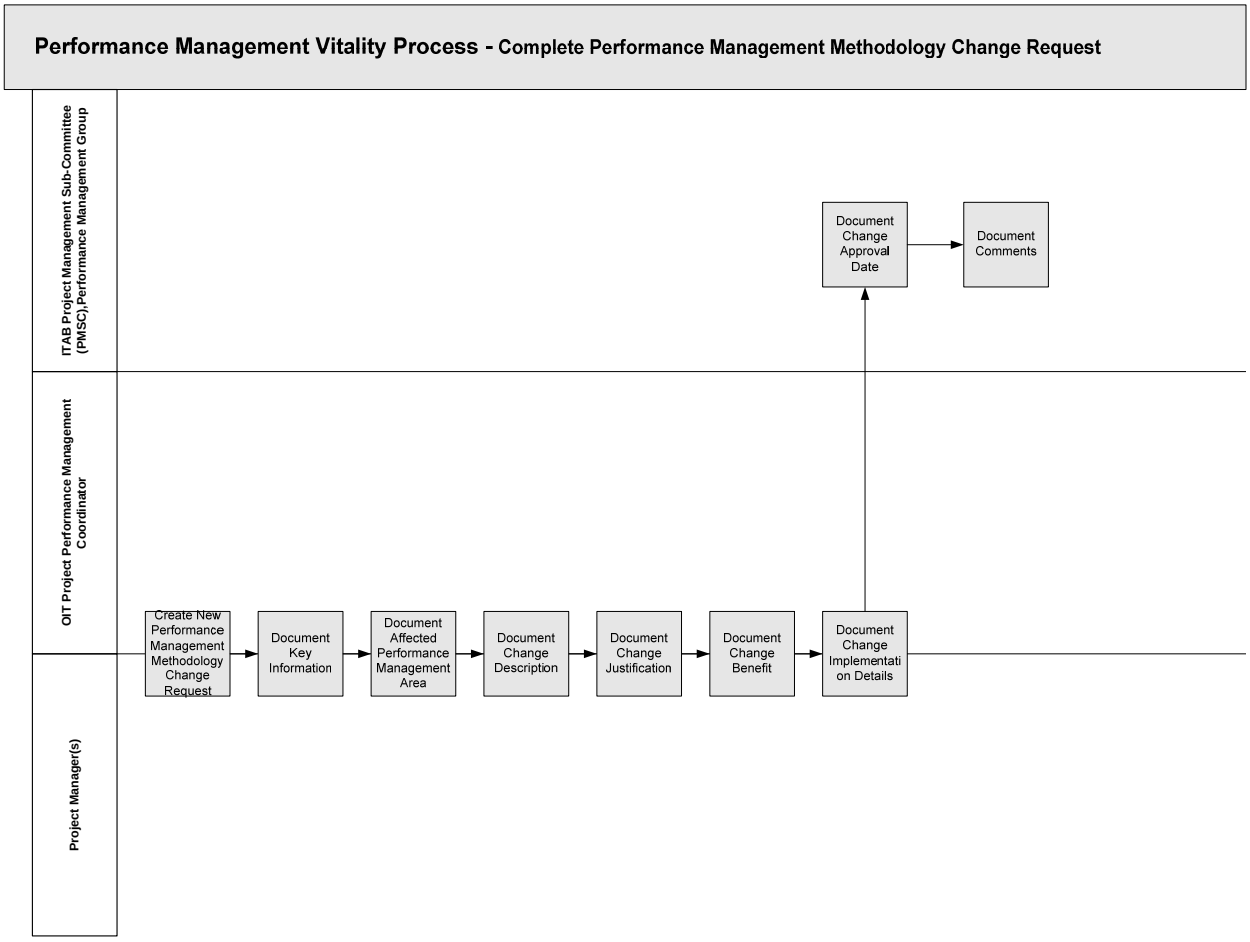
Review Current Project Issues and Mitigation Strategies – Performance Management situations may arise from time to time that have the potential to influence changes to Performance Management processes. Many of these arise from key project issues that change the way performance management is being implemented. This forum provides the Project Managers an opportunity to take an honest look at the performance management processes and document bottlenecks. It also allows for comments and suggestions from the Performance Management working group of the ITAB Project Management Sub-Committee (PMSC).

Determine Impacts to Performance Management Methodology – Before a change to the Performance Management can be made, the overall impact of any proposed change must be determined. Collectively, the session participants must establish, through objective evidence, that a process improvement will consistently produce a result that is superior to what is produced using existing processes. No change should be recommended to any Performance Management processes, templates or reports without concurrence from Project Managers, the OIT

Performance Management Coordinator and the approval from the Performance Management working group.

Produce Performance Management Methodology Change Request – Agreed upon changes to Performance Management processes and tools must be documented via a Performance Management Methodology Change Request. This form captures the change description, rationale, and details regarding any affected procedures and templates. The Performance Management Methodology Change Request template eliminates the guesswork when it comes to making annual changes to the Performance Management by documenting the lifecycle of a change from inception through review and implementation.

Complete Performance Management Methodology Change Request



The Performance Management Methodology Change Request Template provides a means of collecting and tracking needed changes to the Performance Management program, methodology, templates and tools. Using the Performance Management Methodology Change Request Template as a guide will help ensure that all important elements of the report are documented. The following process steps must be followed to aid in this documentation:

Create New Performance Management Methodology Change Request – The OIT Performance Management Coordinator and Project Managers make a copy of the report template to start a new Performance Management Methodology Change Request. This is done for each change determined in the Periodic Performance Management Improvement Sessions. The final result of this process will be a set of Performance Management Methodology Change Requests to be considered for implementation in the annual Performance Management methodology update.

Document Key Information – The following key information is collected related to the source of the change request:

- *Performance Management Manual Version:* This is an indication of the version of the Performance Management Manual for which a change is being requested.
- *Originating Project:* This is an indication of the project where the needed change was discovered.
- *Originating Project Manager:* This is an indication of the Project Manager who originally indicated the need for the change.
- *Change Request Date:* This is the date when the Performance Management Methodology Change Request was created.

Document Affected Performance Management Areas – Provides the location within the Performance Management processes, templates and tools where the change is needed. This includes identification of the manual section, the specific chapter, process, sub-process, template or report.

Document Change Description – Provide a detailed description of the change. This includes specifics regarding process, narrative, template, or report enhancements.

Document Change Justification – Provide a detailed description of the circumstances surrounding the change. This includes details regarding the impacts of the change as well as providing validated examples that justify the change. The Change Justification section documents the details of "why" the change is needed; what evidence exists that indicates the current process needs to be changed; what are the current issues and bottlenecks with the existing process.

Document Change Benefits – Provide the overarching benefits of implementing the approved change and why it should be included in a future revision of the Performance Management. These benefits should be mutually felt among all Project Managers and should reflect the expected Performance Management functionality improvement resulting from implementation of the change.

Document Change Implementation Details – Provides the baseline details of how the approved change should be implemented. This information can be thought of as the high-level design details of how the Performance Management should be changed including items such as sample narrative or updated process descriptions.

Document Change Approval Date – Reserved for the ITAB Performance Management sub-committee, this section indicates the date when the proposed change was discussed by the appropriate State of Missouri IT leaders and determined appropriate for inclusion in the next annual Performance Management update.

Document Comments – Reserved for the ITAB Performance Management sub-committee, this section provides for the capture of remarks, notes or annotations to the change request as discussed by the sub-committee.

PERFORMANCE MANAGEMENT CHANGE REQUEST

MANUAL VERSION	
ORIGINATING PROJECT	
ORIGINATING PROJECT MANAGER	
CHANGE REQUEST DATE	
AFFECTED PERFORMANCE MANAGEMENT AREA IDENTIFICATION	
Manual Section	☐ PART I – Introduction ☐ PART II – Process and Core Measures ☐ PART III – Appendices
Chapter	
Process	
Sub-Process	
Template or Report	
CHANGE DESCRIPTION	
CHANGE JUSTIFICATION	
CHANGE BENEFIT	
CHANGE IMPLEMENTATION DETAILS	
CHANGE APPROVAL DATE	
COMMENTS	

Performance Management Methodology Change Request Template

Template Overview

This template guides the process of collecting information related to approved changes to Performance Management processes, tools and methodology. This form captures the details behind an approved change, rationale as to how future performance management implementations will benefit from the change, as well as general guidance as to how the change is to be implemented. By completing a Performance Management Methodology Change Request template for each approved change, the OIT Performance Management Coordinator can catalog changes in preparation for an annual update to the Performance Management.

Template Sections

The Performance Management Methodology Change Request Template will include the following sections:

- Performance Management Manual Version
- Originating Project
- Originating Project Manager
- Change Approval Date
- Affected Performance Management Area Identification
    - Manual Section
    - Chapter
    - Process
    - Sub-Process
    - Template or Report
- Change Description
- Change Justification
- Change Benefit
- Change Implementation Details
- Target Implementation Date

Template Form Sample

The Performance Management Methodology Change Request Template provides a vehicle for documenting the details of approved changes and/or additions to the Performance Management in an electronic format. The visual representation of the Performance Management Methodology Change Request Template, provided here, is followed by the detailed description of its contents. Project Managers and the OIT Performance Management Coordinator may access *Performance Management* ***Methodology Change Request Template.dot*** for electronic entry of the change request template.

Template Detail

Section I –Manual Version

Provides the version of the Performance Management Manual for which a change is being requested.

Section II – Originating Project

Provides the name of the project from which the change request was derived. The project name may come directly from the Project Manager initiating the change.

Section III – Originating Project Manager

Provides the name of the Project Manager that was responsible for the project listed in Section II. This Project Manager is the individual responsible for identifying the necessary change or enhancement to the Performance Management.

Section IV – Change Request Date

Provides the date on which the value assessment process improvement was discussed and agreed upon. This date should reflect the date the value assessment improvement session was conducted in which this change was documented for inclusion in future Performance Managment update.

Section V – Affected Performance Management Area Identification

This section provides the general location of where the change is to be applied.

2) *Manual Section:* General indication of the major manual components impacted.
3) *Chapter:* Indicates the chapter reference(s) for the approved change.
4) *Process:* Name of any process(s) where the change is to be implemented.
5) *Sub-Process:* Name of any sub-process(s) where the change is to be implemented.
6) *Template or Report:* Name of any templates or reports impacted by the change.

Section VI – Improvement Description

This section provides a detailed description of the approved Performance Management change. This includes specifics regarding process, narrative, template, or report enhancements.

Section VII – Change Justification

This section provides the justification or rationale for the approved change. This includes details regarding the impacts of the change as well as providing validated examples that justify the change.

Section VIII – Change Benefit

This section provides the overarching benefits of implementing the approved change and why it should be included in a future revision of the Performance Management.

Section IX – Change Implementation Details

This section provides the baseline details for how the approved change should be implemented.

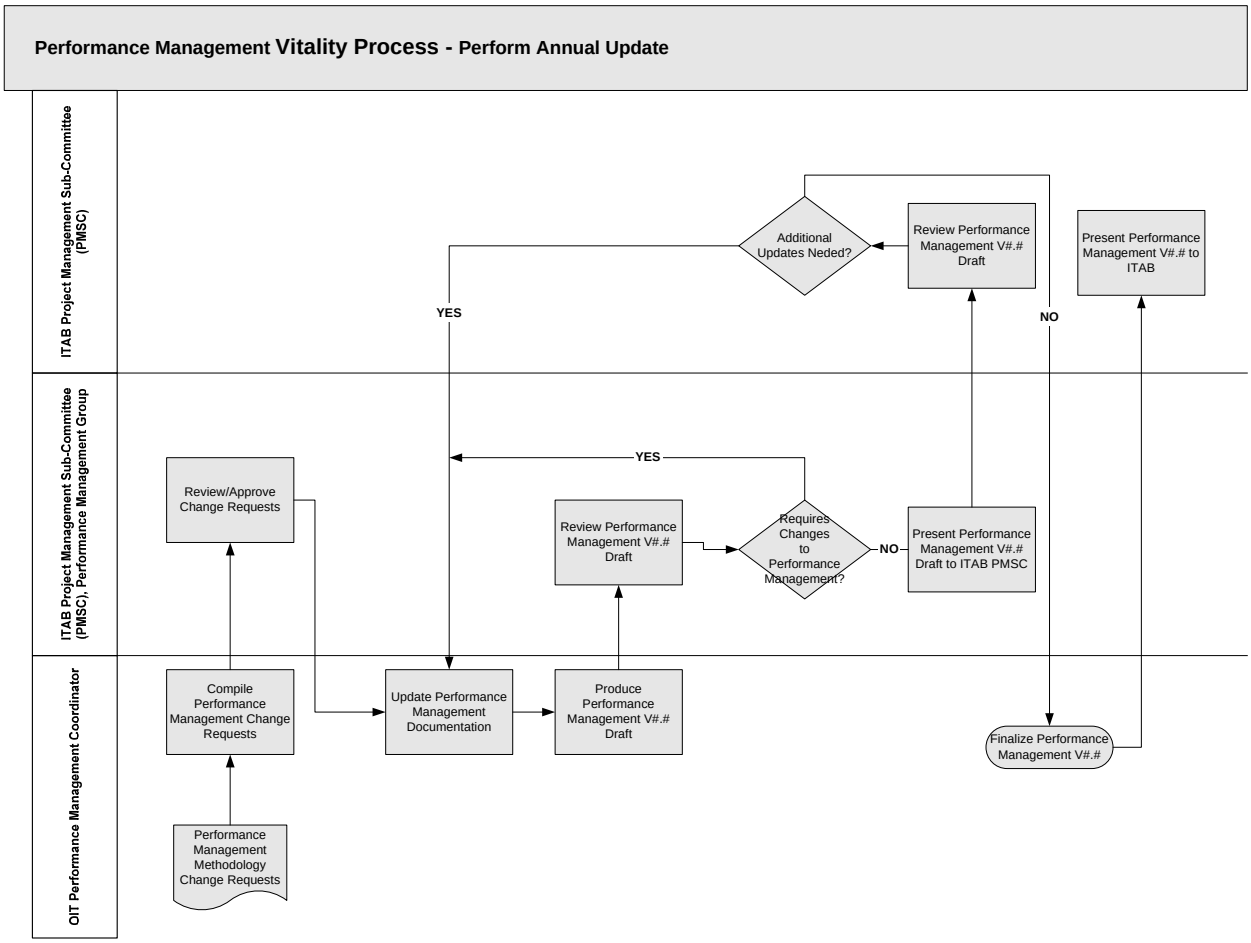
Section X – Change Approval Date

Reserved for the ITAB Performance Management sub-committee, this section indicates the date when the proposed change was discussed by the appropriate State of Missouri IT leaders and determined appropriate for inclusion in the next annual Performance Management update.

Section XI – Comments

Reserved for the ITAB Performance Management sub-committee, this section provides for the capture of any remarks, notes or annotations to the change request as discussed by the ITAB sub-committee.

Perform Annual Performance Management Update



This sub-process is triggered by:

- The initiation of an annual Performance Management revision cycle by the OIT Performance Management Coordinator

As the Performance Management methodology owner, the OIT Performance Management Coordinator initiates this process by collecting all Performance Management Methodology Change Requests that have been generated since the last Performance Management revision.

Compile Performance Management Change Requests – The OIT Performance Management Coordinator begins this sub-process by assembling a package of all the approved change requests that have been formed since the last Performance Management revision. Each of these requests should indicate the current active Performance Management version as the source manual requiring a change.

This compilation process can also include Performance Management methodology changes as a result of influences external to the value assessment program. Changes to other OIT sponsored programs, political or administrative changes, as well as changes to the business operations of the State of Missouri could influence Performance Management manual changes.

Also included in this compilation process is a brief analysis of all the past years packaged changes. If necessary, the OIT Performance Management Coordinator can use the change request reference information to solicit additional clarification of a particular change and to verify the current validity of the change.

Review/Approve Change Requests – Once all changes are gathered and the OIT Performance Management Coordinator has a packaged scope for the Performance Management update, the collection of change requests is delivered to the Performance Management working group of the ITAB Performance Management sub-committee for review and approval. The sub-committee assessment of each change request should consider any impacts or risks that the change may have on other ITAB sponsored programs particularly those being implemented by the Project Management Standing Committee.

For all approved changes, the Performance Management working group should complete the Performance Management Methodology Change Request by entering the date of approval along with any comments, notes or annotations to the proposed change. Should a change be rejected, the reasons for refusal should be captured in the comments. After the sub-committee has reviewed, approved and/or rejected each change request, the package is returned to the OIT Performance Management Coordinator in order that changes to the Performance Management manual can begin.

Update Performance Management – Changes that affect the administrative and operational aspects of the Performance Management methodology are central to any updates. This includes changes to performance management terms and definitions, performance management program relationships and governance framework, as well as broad changes to the overall methodology. Changes that affect the documented processes, procedures, templates, reports and tools of the Performance Management methodology are also critical. This includes changes to any performance management processes including value assessment vitality.

Note: Changes to definitions, governance structure and the general methodology may directly impact the processes and tools. The reverse is also true, changes to the processes, templates and reports can effect the overall definition of the methodology.

Produce Performance Management V#.# Draft – As the owner of the Performance Management documentation, the OIT performance management coordination staff is responsible to make sure changes are correctly incorporated into a draft of the Performance Management manual. The execution of this update can be performed directly by OIT, through coordinated efforts with the Project Mangers or through a third party. The exact means by how approved changes are incorporated into a Performance Management version update is at the discretion of OIT and the Performance Management Coordinator.

Review Performance Management V#.# Draft – Once the new draft of the Performance Management methodology Parts I, II, and III has been completed, it is presented to the Performance Management working group of the ITAB Project Management Subcommittee for review and approval. If the changes are satisfactory, a final review is conducted by the entire ITAB Performance Management Subcommittee. The Performance Management Subcommittee is responsible for review and final feedback relating to updates to the Performance Management methodology.

Finalize Performance Management V#.# – Upon final review and authorization by the ITAB Project Management Subcommittee, the OIT Performance Management Coordinator will release an updated version of the Performance Management manual.

Present Performance Management V#.# to ITAB – Once available, the Project Management Subcommittee will formally present the Performance Management V#.# to the ITAB for formal adoption. The manual will be published and distributed to the members of ITAB to provide to Project Managers utilizing the Performance Management process. Project Managers would incorporate the methodology changes into both current and future performance management engagements.

APPENDIX F: References

Department of Commerce, "Guide to a Balanced Scorecard Performance Management Methodology," http://oamweb.osec.doc.gov/bsc/guide.htm

Department of the Navy, "Guide for Developing and Using IT Performance Measures," Version 1.0, October 2001

Kaplan, Robert S. and David P. Norton, "Translating Strategy into Action: The Balanced Scorecard," *Harvard Business School Press*, 1996

Office of Information Technology, State of Missouri, "Information Technology Strategic Plan," http://oit.mo.gov/current%20reports/2003-2004MissouriITStrategicPlan.doc

Office of Management and Budget, Federal Enterprise Architecture Program Management Office (FEAPMO), "The Performance Reference Model," Version 1.0, Volume I, September 2003

Office of Management and Budget, Federal Enterprise Architecture Program Management Office (FEAPMO), "The Performance Reference Model," Version 1.0, Volume II, September 2003

APPENDIX G: Recommended Reading

Anonymous, "Using Measurement to Boost Your Unit's Performance," *Harvard Management Update*, October 1998

Bohner , Dr. Shawn A., "Worldwide IT Benchmark Report," Meta Group, 2004

Federal CIO Council and IT Management Industry Advisory Council (IAC)," Smart Practices in Capital Planning," October 2000

Husselbaugh, Brett, "Constructing a Balanced Scorecard for IT," *Planning Assumption*, Giga Information Group, November 6, 2000

Kaplan, Robert S. and David P. Norton, "The Strategy Focused Organization: How Balanced Scorecard Companies Thrive in the New Business," *Harvard Business School Press*, 2000

Kaplan, Robert S. and David P. Norton, "Using the Balanced Scorecard as a Strategic Management System," *Harvard Business School Press*, January-February 1996

Long, Major Dale USAF, "The Lazy Person's Guide to IT Performance Measurement," *CHIPS*, Winter 2001

"Managing the Value of Information Technology," by Dr. Shawn A. Bohner, Meta Group, 2000

Oakley, Dr. Lisa, "A Performance Measurement Methodology," *Armed Forces Comptroller*, Winter 2001

Procurement Executives' Association, "Guide to a Balanced Scorecard: Performance Management Methodology," July 8, 1999

"State of Missouri Overview of IT Performance Engineering and Measurement Strategies," Dr. Shawn A. Bohner, Meta Group, March 17, 2000

Tenner, Arthur R. and Irving, J. DeToro, "Total Quality Management, Three Steps to Continuous Improvement"

Voskamp, Leo, "Going from Unacceptable to Exceptional: The How and Why of Balanced Scorecarding," DM Review Magazine, October 2003

Working Council for Chief Information Officers, "Toward Common Ground: Applying the Balanced Scorecard to the Information Services Function," January 1998