

COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF HUMAN SERVICES

INFORMATION TECHNOLOGY STANDARD

Name Of Standard: Balanced Scorecard Standard	Number: STD-EKMS007
Domain: Knowledge Management	Category: Data Analysis
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Abstract:

The Department of Human Services is committed to improving its operational efficiencies in monitoring its program performance by introducing the balanced scorecard system to the Department. The Balanced Scorecard (BSC) provides a framework that not only provides performance measurements, but also helps planners, analysts, and managers identify what should be done and measured. It enables an enterprise view of an organization’s overall performance by integrating financial measures with other key performance indicators around customer perspectives, internal business process perspectives, and learning and growth perspectives.

The Balanced Scorecard is a way of taking the strategic vision of the Department’s path to success and creating and analyzing a manageable set of metrics that tell us if we are on the right track to see the success of our initiatives. Some key elements are:

- Viewing the organization from its strategic objectives.
- Adopting a balance of measuring key performance indicators by using the underlying related metrics.
- No more than 25 Key Performance Indicators (KPIs) on a scorecard.
- Setting quantified, measurable goals
- Reveal the relationships among and between each metric and the ways in which performance in one area affects the outcomes in another.

General:

The purpose of this document is to introduce a methodological framework, and establish standards and guidelines, for the design and the development of an enterprise-wide Balanced Scorecard Performance System. The standards established here apply to all analysts and developers, both state staff and contract employees, who participate in the development and the implementation of the balanced scorecards for the Department of Human Services. This document ensures that all scorecard applications developed will facilitate enterprise-wide interoperability and standardization.

Standard:

The basic design of a balanced scorecard (BSC) performance system shall entail the following four elements: financial, customers and stakeholders, internal business processes, and employees and organizational capacity.

This section provides a general framework for the development of a balanced scorecard performance system. It is important that these phases must be followed in the design and the development of a balanced scorecard system for the Department of Human Services.

Phase 1: Planning

Step 1: Team Formation and Organizational Assessment

- Select scorecard team
- Develop team plan, schedule, budget, create communication plan
- Examine mission, vision statements and SWOT analysis if available
- Identify needs and KPIs to achieve the vision

Phase 2: User Requirements Document

Step 1: Define Strategic Themes

- Derived from vision and assessments
- Develop KPIs
- Determine how to obtain KPIs
- Sort out related issues
- Provide more specific focus for planning

Step 2: Define Perspectives and Desired Outcomes

- Perspectives: Diverse ways of looking at the organization
- Desired Outcomes and expectations: Meaning of mission success for each perspective and strategic theme

Step 3: Create a Strategy Map

- For each strategic theme, the team should propose a chain of causes and effects that they believe will lead to the desired outcomes
- Mapping of the chain is done by creating a “strategy map”

Step 4a: Define Performance Measures and Targets

- For each theme/desired outcome goal, the team should ask: “How will we know if this goal is being achieved?”
- Team should identify how each goal should be measured, e.g., surveys, data collection, etc.
- Team should examine baseline data (where available) to set schedules and targets
- Create Measures Dictionary workbook in Excel to define the measures and their targets.

Step 4b: Define Tolerance and Variance with Users

- For each measure, tolerance can be set for the goals. For instance, you can set a tolerance of if within 5 percent of an amount as acceptable. Tolerance can be set to 0 (no tolerance), a number or a percent. Tolerance will visually be shown as being within a vertical yellow line on the scorecard to be acceptable or outside as being unacceptable.
- The scorecards will automatically calculate and display a variance number between the measures and targets. User understanding of what variance numbers are acceptable will enhance the effectiveness of interpreting the scorecard information.

Step 5: Develop Strategic Initiatives

- The team should prioritize users’ needs and requirements based on strategic importance and performance and create initiatives for improvements
- Each initiative should be linked to strategic measurements so progress can be monitored
- Define the KPIs from the strategic themes and decide which critical and important KPIs will be on the Balanced Scorecard to be monitored as well as who/what department will be accountable. No more than 25 should be tracked at any one time.

Phase 3: Conceptual System Design

This phase is concerned with a conceptual system design. It identifies the inputs to the system, the outputs of the system, the system repositories, and data staging centers to prepare and format the information. This phase can include a BSC prototype to allow developers some more ideas as to how to design a full-scale system. The conceptual aspects of the following data warehouse elements and functions should be considered in the conceptual system design.

- Enterprise-wide Data
- Composite Measures
- Data/Reporting Locations
- Advanced Executive Reporting
- Web Publishing
- Advanced Analysis
- Dynamic Links to Legacy Systems

Phase 4: BSC System Development

- Report Design
- Integration Mapping/Downloads
- User Acceptance Testing

Phase 5: BSC System Implementation

This phase provides the process of developing Balanced Scorecards at each and every level of the organization. When cascading a scorecard, we are doing the following:

- Driving BSC mentality and methodology deep into the fabric of the organization
- Enabling all voices to share the orchestration of strategy
- Implementing, not technology, but through technology a new management process and habit

Task 1: Cascaded Scorecards Support Strategy

Communicating enterprise strategy to business units regarding strategy, objectives, and measures: Financial, Customer, Internal Business Processes, Learning and Growth

- Cascading the Balanced Scorecard:
 - Build *awareness* across the enterprise of the key strategies and objectives and measures the organization needs to accomplish in the attainment of the future
 - Build *alignment* in the organization to the main objectives and brings every member closer to the real targets, which they can participate in achieving
 - Build *agreement* among team members across the organization when decisions are being made.
 - Build *action-orientation* when performance measures are attached to each objective and strategy. What gets measured gets done.

Task 2: User Education and Training

- Training Plan
- Training Materials
- Training Schedules

Phase 6: Post-Implementation Review

- Post-Implementation BSC System Review
- Evaluate Programs and Operations Outcomes Relative to Strategy, Objectives, and Measures

Design-Specific Standards

System-Specific Design Perspectives: Color and Display

- A scorecard should fit on one screen at whatever resolution is considered be the lowest common denominator for the users who will be viewing the scorecard. If more information is desired through the scorecard than can be shown on one screen consider the following:
 - Maximize the data to pixel ratio. It is important to use as few pixels as possible for ornamental purposes (titles, instructions, buttons, graphics, etc.) and, instead, keep the scorecard data rich by using prime real estate for the most important data. The more intuitive a scorecard is the less space that will be required for instructions (which should be context sensitive). The screen layout design should strive for eloquence through simplicity.
 - Never have a third dimension on bars or pies or any graph or chart unless that dimensions represents a measure. Even second dimensions should be minimized if they do not represent measures.
 - An initial scorecard layout should represent a consistently high level of information with drill-through links to more detailed information if necessary.
- Use color very sparingly and avoid red and green since colorblind people cannot distinguish red from green.
 - Shades of grey are a very good way of showing graduations between good (lighter shades) or poor (darker shades) performance measure results.
 - When using shades of grey, if a different color is used to call attention to something, it will stand out much more effectively than if many different colors are present. If the scorecard looks good printed on a black and white printer, then it will probably look good to colorblind people.

Report Developments:

- Scorecards and drill-through reports should not access databases that support OLTP transaction systems.
- Multiple reports can be embedded inside a scorecard under the “Reports” tab to offer more detailed information.

Best Practices

General Design Concepts and Strategy:

- Limit the number of Key Performance Indicators to less than 25 indicators
- Include measures for all perspectives and all strategies
- Seek relationship and balance among measures
- Develop solid baseline date
- Develop measures for past, present and future
- Don't over rely on output, process and input measures
- Set stretch targets
- Hold people accountable for results

Criteria for Selecting Performance Measures

The most important decision in the development of a balanced scorecard is to choose measure and items to measure. Hence, before choosing, application developers must ask the user the following questions to ensure that performance measures are correctly selected for the application.

- Is the measure a leading or lagging indicator of performance?
- What type of measure is it?
- Why is this measure important? What does it tell me?
- Is this a simple way to uncover performance of any activity?
- What other measures that I am measuring give me the same result in another form?
- Can I get this measure regularly and automatically, or do I have to find it manually?
- What drives this measure?
- Is this measure an equational measure (e.g. does it need to be formulated using a formula or is it just a single number?)

Furthermore, performance measures must fit the following simple criteria for selection:

- Easy to understand
- Data source integrity – must come from a reliable and repeatable source
- Cause-and-effect driven
- Frequency of change
- Bounded variable – not too unstable behavior
- Accurate
- Representative of reality
- Relevant to the objective and strategy

Performance Measure Dictionary

As organizations and leadership change, new measures need to be added. There is a need for a mechanism to discern whether a new measure should or should not be added and consequently the number of measures continued to grow. It is important to maintain a performance measure dictionary which will:

- Identify all performance measures
- Define the purpose of the measures
- Establish what the same measures are
- Direct the location of these measures
- Explain the basis that this measure exists
- Define the output and outcome for the measure¹
- Define an owner for the measure
- Define the objective and perspective that drive this measure

A performance measure dictionary should have a set of criteria and conditions for additions. It should also be managed and maintained by one individual or team. Please refer to Appendix A for a sample dictionary page.

BSC UAT Criteria

The UAT process should test not only the system concept but the following:

- Acceptance of the concept
- Ability of the organization to understand and engage in the topic
- Ability of the organization to learn
- Ability of the organization to accept the different information
- Technology absorption capability of the operational teams
- Technology absorption capability of the management teams
- Interface demands awaiting you if the project would go live

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Output measures are numeric output of an activity. Consider an activity titled “selling.” The number of sales calls is an example of the output measuring of the selling activity. Another example, in the human services program, the number of claims filed during the month of July could be an output measure.

Outcome measures ask if the desired result of an activity has been achieved. Some government agencies have output measures that lack outcome measures. For example, a relief agency measured the number of times it assisted the needy in Hurricane disaster areas, and the number was very impressive. Further investigation revealed that many teams were on sites with little to no foods or no medical supplies. Furthermore, whenever they had supplies, looters and thugs stole these supplies. In this case, an output measure of the number of visits, combined with an outcome measure of the number of people saved with delivered medications, may work to understand the challenges.

Glossary

Balanced Scorecard (BSC) A formalism, methodology, and framework that translates strategy to actionable and measurable objectives. Following four perspectives, BSC balances these objectives among non-financial and financial, leading and lagging, operation and finance. This methodology allows for all parts of the organization to know and understand their contribution to strategy.

Cascading the scorecard The action of driving objectives, measures, targets, and initiatives into the organization and through multiple levels

Initiatives Action programs that will achieve our performance goals (e.g., benefit applications via Internet)

Key Performance Indicator (KPI) It measures something that is strategically important to the business in question. A KPI is a metric that matters. Everything can't be considered "key" or nothing will stand out from the pack and get the attention it deserves. In a typical performance system, there are average of 12 to 25 KPI's and potentially hundreds of supporting metrics. KPI's should be assigned to individuals with responsibility to address them, and a plan should be in place to take action if a KPI passes a certain threshold.

Lagging indicator A measure that is identified only after an event occur

Leading indicator A measure that can indicate the result of an event prior to it occurring

Measure A quantifiable formula whose variables define what needs to be measured and monitored in order that a target is achieved

Mission Why an organization exists and what it is charged with; what we are about?

Objective A goal to be achieved that is specific, measurable, actionable, results in an achievement ends in a period of time

Performance measure The methods to align performance results to measures and to manage this process

Performance measure (Lagging) Indicators of success (e.g., number of citizens served last month)

Performance measure (Leading) Predictors (performance drivers) of future success (e.g., increase in employee knowledge)

Perspectives Different views of our organization (e.g., customers/stakeholders, employee and capacity, financial, internal processes)

Strategic theme Key strategic objectives for differentiation, focus, and market dominance

Strategic Map Cause-and-effect relationships among strategy components

Strategic mapping The process of linking all the strategic objectives within the four perspectives into a cause-and-effect map

Strategies How we intend to accomplish our vision and goals; our approach, or “game plan”

Target A numeric or nonnumeric value representing a desired result; that is, desired level of performance for a performance measure (e.g., customer satisfaction target = 95%)

Values In contrast to a mission that is *why* an organization exists, the values are about *how* an organization wishes to exist

Vision What we want to be in the future (e.g., “Our vision is to be the leading provider of . . .”)

Appendix A: Performance Measures Dictionary Sample

The use of a performance measures dictionary is critical to establishing the language of the project. Exhibit A illustrates a sample page in a dictionary for performance measures. It describes the nature of the performance measure, including leading/lagging, its source, the activity it supports, its members, its process parents, inputs, the type of its measures, and possible target measures, among others. Further additions include when and how to collect its data.

Exhibit A

Performance Measures Dictionary Item Sample

Performance Dictionary #:	Owner:
Performance Measure Types:	Description:
Leading/Lagging Indicator:	Comments:
Target:	Period:
Other Attributes:	Source Data:
Strategic Theme:	
Objectives:	Linked with and to:
Why is this measure important?	

Appendix B: Sample Objective, Measures, and Targets

Sample Objective, Measures, and Targets
Strategic Theme 1
Children are healthy
Objective 1
Pregnant women receive adequate care.
Performance Measures
<ul style="list-style-type: none"> • Percent of low income women receiving prenatal care in the first month of pregnancy <div style="text-align: center; margin-left: 100px;">TARGET > x%</div> • Percent of clients completing alcohol or drug treatment and are not abusing <div style="text-align: center; margin-left: 100px;">TARGET > y%</div>

Appendix C: Example of Strategic Framework (Perspectives and Strategic Themes)

Perspective	Theme 1: Effective & Efficient Government	Theme 2: Social, Education, & Economic Opportunity	Theme 3: Community Health and Safety	Theme 4: Growth Management and Environment
Customers				
Business Processes				
Financial Value				
Learning and Capacities				

Exemptions from this Standard:

There will be no exemptions to this standard.

Refresh Schedule:

All standards and referenced documentation identified in this standard will be subject to review and possible revision annually or upon request by the DHS Information Technology Standards Team.

Standard Revision Log:

Change Date	Version	Change Description	Author and Organization
07/08/2008	1.0	Initial Creation	Jere Shifflett
08/27/2009	1.1	Reviewed Content, no changes	Jere Shifflett
7/08/2010	2.0	Reviewed, minor updates	Jere Shifflett
2/25/2016	2.1	Reviewed, minor updates	Allan Trason