

Using Strategic Performance Management® to Create Balanced Scorecards in a Healthcare Environment

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ABSTRACT

Strategic Performance Management software from SAS Institute provides an extensive, interactive methodology for creating balanced scorecards as a way of measuring performance within organizations. A balanced scorecard also allows for effective communication of strategy as well as performance information throughout an organization. This paper examines ways of implementing a balanced scorecard approach within healthcare organizations. Examples and suggestions are given to show how balanced scorecards might be deployed in such environments.

To accomplish its objectives, this paper is divided into four parts. The first section examines the scorecard environment that will be used, including the Map and the Compass. The second part looks at creating a template for the scorecard, while the third part examines creating and populating the scorecard itself. Finally, the last section will address publishing the scorecard.

The purpose of this paper is to illustrate what healthcare organizations can do with Strategic Performance Management software.

PART I: INTRODUCTION

BACKGROUND:

A large problem for healthcare organizations is that enterprise information is dispersed across disparate data systems that cannot communicate with one another. ETL (Extract, Transform and Load) is the process of selecting, migrating, transforming, cleansing and converting mapped data from existing legacy environments to a data warehouse environment. Strategic Performance Management software can provide an interactive solution that encompasses ETL processes and analysis tools to enable performance management focused on healthcare industry.

SAS's Strategic Performance Management software enables organizations to mine their data to provide information that aligns their strategic objectives with the performance measures they have chosen. SAS statistical analysis tools enable sophisticated reporting and data analysis. The measures chosen by the client can be linked to appropriate JCAHO functions and standards to reduce the amount of time and resources required to support compliance with JCAHO standards and preparation for survey. Alternatively, the client can choose other standards for linkage, including Baldrige National Quality and Six Sigma systems.

SCENARIO:

Understanding the scenario is very important in performance management applications as it drives everything in the project. This scenario uses four scorecards: PS Health Systems Corporate (a fictitious company), Hillsboro Primary Care, Richland Hospital, and Watertown Primary Care. For the purposes of this paper, the creation of only **one** scorecard, the corporate level, will be illustrated.

PS Health Systems had been using spreadsheets and presentation slides to manage their performance data since reading about managing hospitals using a balanced scorecard approach last year. This required manual entry of the data and was both time consuming and error prone. Therefore they are now looking for a more strategic solution and have brought in SAS consultants to review their scorecard and automate the collection, transformation, and dissemination of the performance management data. In the process, they desire to strategically

align the staff of the corporation as well as expand the collaboration of knowledge. After the consultants started working with PS Health Systems, four quarters worth of data have been added to their system.

The following Strategic outline evolved from the Scenario. Four **Perspectives** (numbered items) with two **goals** (lettered items) each were identified. Within each goal are a varying number of **measures** (bulleted items).

1. Financial
 - a. Expense Control
 - Cost per Discharge
 - Pharmacy Cost per Discharge
 - Supply Cost per Discharge
 - Labor Cost per Discharge
 - b. Revenue Enhancement
 - Margin
 - Net Days in AR
 - Payor Mix
 - SWB as a % of Net Revenue
2. Customer
 - a. Operational Excellence
 - Discharged Before 11:00 am.
 - Wait Times in the ED
 - b. Customer Intimacy
 - Physician Satisfaction
 - Patient Satisfaction
3. Internal Business
 - a. Operational Process
 - ALOS
 - Cost Per Case
 - Productivity
 - b. Quality
 - Number of Patient Falls
 - Pain Management
 - ORYX Indicators Mean Average
 - Restraint and Seclusion
 - Nosocomial Infection Rate
4. Knowledge and Evolution
 - a. Professional Development
 - Dollars Spent on Training
 - % of Staff Attending Training
 - Publications
 - b. Staff Satisfaction
 - Management Approval Rating
 - Staff Turnover
 - Absentee Rate
 - Overall Staff Satisfaction

ENVIRONMENT:

An environment is a directory in which the subdirectories and XML files are located containing the information needed to build and publish your scorecards.

A Hospital or Healthcare organization can have more than one environment with many scorecards in each one. Typically, there will be at least one scorecard for each department within each division of the organization. In some cases, a new environment will need to be created.

The following diagram represents the folder structure of a typical environment.

Master12
version
client
computesvc
dw
code
jobs
macros
scripts
controldata
globalmeta
metabase
metadata
model
staging
odd
qadata
rawdata
bgenv
bgexport
datasvc
olaptables
bgtables
tables
worktables
websvc
inetpup
wwwroot
comments
published
sasweb

diagram 1.

This paper illustrates the creation of an environment by copying from an existing one. To set up a new scorecard environment, do the following:

- start Strategic Performance Management
- select File → New → Environment from the pmenu facility. The New Scorecard Environment window opens.

Fill in the following values:

- name: course121
- supply the path
- check the copy box
- indicate Master12 as the environment to copy.

The completed window is shown in figure 1.

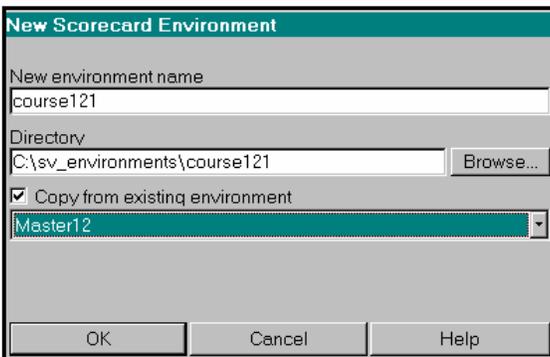


Figure 1.

Next, click on the **OK** button to open the 'Map' of the newly created scorecard environment. The **Map** is the tool that builds the scorecards.

It integrates tables, supporting documents, images and charts for supporting scorecards.

The Map of a scorecard has four main components:

- Viewing area
- Scorecard hierarchy
- Template group bar
- Data group bar

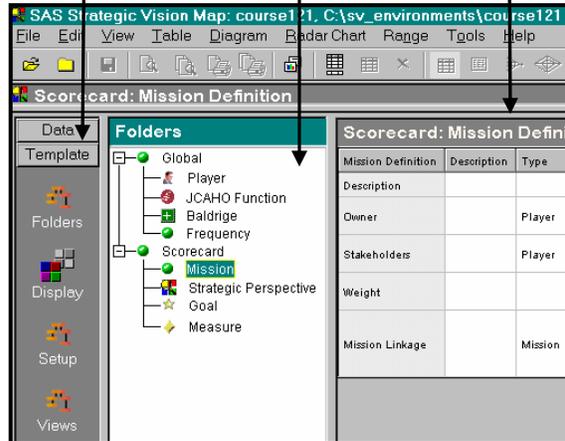


Figure 2.

The **Data** group bar and the **Template** group bar occupy the same space. The contents of the Scorecard hierarchy are determined by the selection of the Data / Template group bar.

The **Template** group bar is the tool for setting up the skeleton of the publishing environment. It is used to create global and scorecard definition tables and define columns. This is basically the metadata of the application. Here, the user defines how the data is going to be used. It consists of the following icons:

- Folders
- Display
- Setup
- Views

Choosing one of these icons determines what is displayed in the scorecard hierarchy of the map. Figure 2 displays the contents of the scorecard hierarchy when the Folders icon is selected. These items were all copied from the Master12 environment.

Figure 3 displays the contents of the scorecard hierarchy when the Display icon is selected.

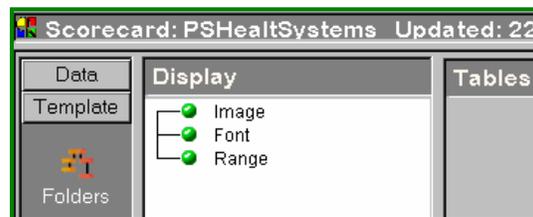


Figure 3.

Figure 4 displays the contents of the scorecard hierarchy when the **Setup** icon is selected.

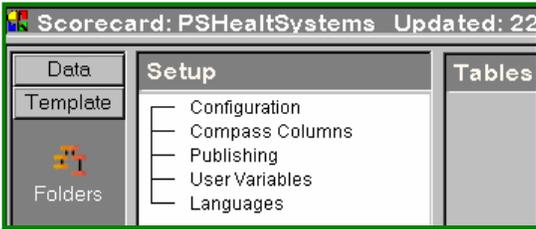


Figure 4.

Figure 5 displays the contents of the scorecard hierarchy when the **Views** icon is selected.



Figure 5.

The **Data** group bar is a tool for adding and displaying data and graphics. To open it, simply select the Data button. It consists of a Global icon and a Scorecard icon.

Figure 6 displays the contents of the scorecard hierarchy when the **Globals** icon is selected.

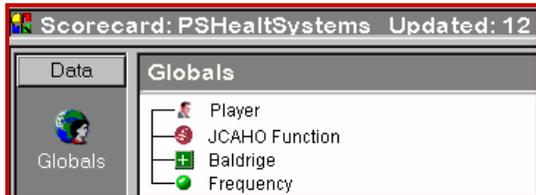


Figure 6.

Figure 7 displays the contents of the scorecard hierarchy when the **Scorecard** icon is selected.

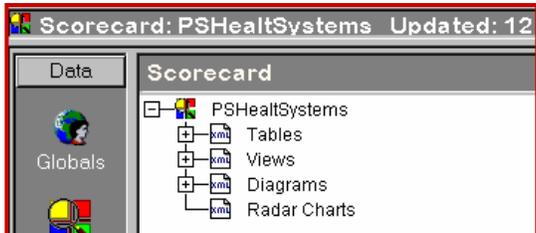


Figure 7.

The above figures illustrate all of the parts of the **Map** and are copied from the Master12 environment. If anything else needs to be added to this scorecard application, it will be done through the **Map**.

The **Compass** is a tool for communicating strategy to the organization by displaying the finished scorecards.

Figure 8 displays a finished scorecard that was copied from the Master12 environment.

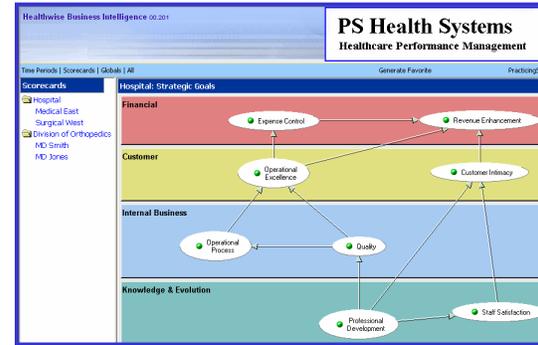


Figure 8.

Use the Compass to navigate between scorecards and time periods, and then drill down through cause and effect relationships.

PART II: CREATING A TEMPLATE

Once the scorecard environment is in place, the next step is to create a template for the scorecard. A Template is a layout for the performance management application. It tells Strategic Performance Management the type of supporting information to be included and how to manage and store it. The template is made up of all the definition tables. If a new environment is created, the user must plan and build his own template. If an environment is copied, the existing template can be edited in the **Template** group bar.

Once the business scenario (the design concept based on the Performance Management Methodology) and the scorecard environment are developed, take the following steps to build a template:

- use the **Folders** icon to develop the Global definition table
- use the **Folders** icon to develop the Scorecard definition table
- use the **Display** icon to:
 - create performance measurement ranges
 - associate images with elements of the hierarchy view
- use the **Setup** icon to:
 - assign measures
 - define compass columns
 - define user variables
- use the **Views** icon to define views to be used in the Map and Compass.

When creating templates, remember that each row in the definition table contains column information for the scorecards. Look at the rows in the Global Player Definition table (Figure 9).

| Global: Player Defini | |
|-----------------------|----------------|
| Player Definition | Description |
| Role | |
| EEmailAddress | E-Mail Address |
| OfficePhone | |
| Pager | |
| CellPhone | |

Figure 9.

Look at the columns in the Player scorecard Figure 10).



Figure 10.

For the purposes of this paper, the scorecard environment has been copied from Master12. This means that all the templates from Master12 were copied to the Course121 environment. With all the templates in place, the next task is to create and populate the scorecard(s).

PART III: CREATING SCORECARDS

Once the scorecard environment and the template(s) have been created, the next task is to create the scorecards for PS Health Systems. Make sure to be in the correct scorecard environment before creating the corporate level scorecard. To get to the correct environment, go to the pmenu facility and click on File → Open Environment → Course121. Figure 11 displays part of the Course121 environment.

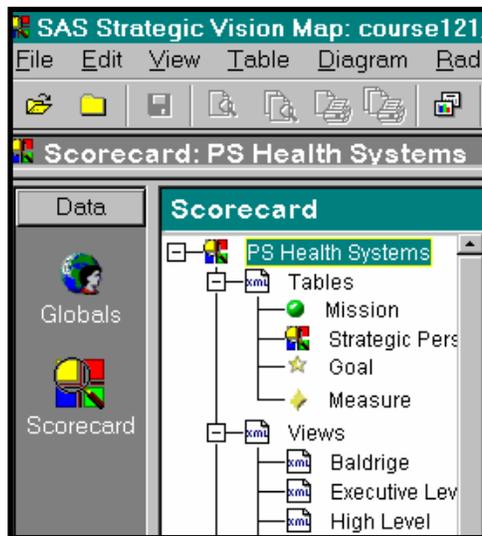


Figure 11.

Click on the Strategic Perspectives table to see the copied values. These are displayed in Fig.12.

| PS Health Systems Scorecard: Strategic Perspective | | |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------|-------|
| Strategic Perspective | Description | Owner |
| Financial | Deliver strong and consistent financial performance in the eyes of payors and the Board of Trustees. | |
| Customer | Be recognized as the premier provider of healthcare services in our region and local markets. | |
| Internal Business | Deliver high quality innovative care while respecting the needs of the patient. | |
| Knowledge & Evolution | Be recognized as a leader in developing skills and performance of employees. | |

Figure 12.

These perspectives are the same ones that were identified in the scenario earlier in the paper.

Next, examine the Goal table as seen in Fig.13.

| PS Health Systems Scorecard: Goal Table | | | | | | |
|-----------------------------------------|-------------|---------------|-------|-------------|--------------|--------|
| Goal | Description | Strategy Link | Owner | Causal Link | Stakeholders | Weight |
| Goal #1 | | | | | | |
| Goal #2 | | | | | | |
| Goal #3 | | | | | | |

Figure 13. Goal Table

Notice that there are no goals. The next task is to take the eight goals identified in the scenario and key them into this table. After the goals are keyed into the table, go to the Strategy Link column and click. A pop-up menu appears with the four values from the Strategic Perspective Table, as shown in Figure 14.

| PS Health Systems Scorecard: Goal Table | | | | | | |
|-----------------------------------------|-------------|-----------------------|-------|-------------|--------------|--------|
| Goal | Description | Strategy Link | Owner | Causal Link | Stakeholders | Weight |
| Expense Control | | Customer | | | | |
| Revenue Enhancement | | Financial | | | | |
| Operational Excellence | | Internal Business | | | | |
| Customer Intimacy | | Knowledge & Evolution | | | | |
| Operational Process | | | | | | |
| Quality | | | | | | |
| Professional Development | | | | | | |
| Staff Satisfaction | | | | | | |

Figure 14. Goal Table with Strategic Links

After providing a Strategy Link for all eight goals, go to the Measure table and key in the measures that were identified in the scenario. Next, go to the Goal Link column link in any row and click. A pop-up menu appears and is populated with the goals from the Goal table. After all the values are keyed in, the scorecard is now ready to publish.

PART IV: PUBLISHING SCORECARDS

To publish a scorecard, you need to go to the pmenu facility and select File → publish. This opens the Publish Scorecard Environment window (figure 15).

| Publish Scorecard Environment | |
|-------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| Name | course121 |
| Period | 1 |
| Directory | C:\Ben\publish <input type="button" value="Browse..."/> |
| Time Stamp | 02OCT2001 |
| <input type="button" value="OK"/> <input type="button" value="Cancel"/> <input type="button" value="Help"/> | |

Figure 15.

Supply the Name of the environment (course121) and then click on the Browse button.

Browse to choose a directory that will contain the published scorecards from the course121 environment. If the directory does not exist, the user will be prompted to create it.

Next, a status log appears displaying the publishing progress (figure 16).

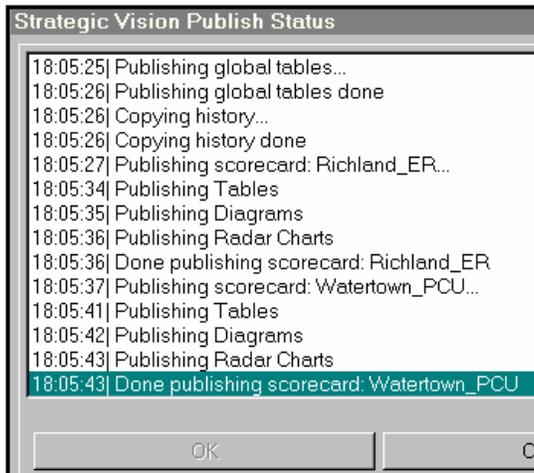


Figure 16.

Clicking on the Save button of the Strategic Performance Management Publish Status window, gives the user an opportunity to save the contents of the log. Simply enter a location in the Save As window and click on Save. This completes the publishing process.

The next thing to do is to **view** the published scorecard. Do this by opening a browser and point to the location of the published scorecard. There will be several folders, but select the **html** folder (figure 17).

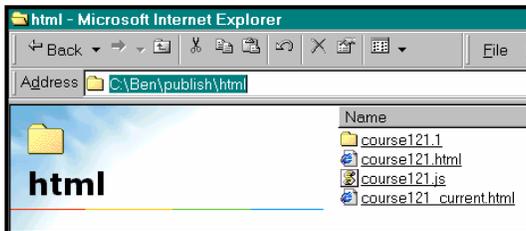


Figure 17.

Select the file ending in current.html. This displays the most recently created compass.html file (figure 18).

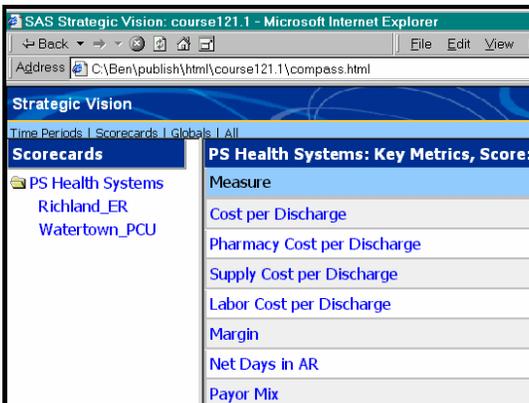


Figure 18.

Now, drill down through various levels to look for relationships in the data.

During the presentation of this paper at SESUG, a demonstration will be given of the scorecard application that was developed here.

CONCLUSION

Strategic Performance Management software can help you think through the strategic needs of your organization. It has already been used in several healthcare organizations to bring costs down without compromising service.

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