How-to Guide
SAP CPM

How To... Handle Seasonality in KPIs

Version 1.00 – June 2008

Applicable Releases:
SAP SSM 7.0

1 Business Scenario

The effects of seasonality to a business affect more than ice cream vendors and skiwear shops! It is an issue that impacts almost every business – from private industry to government. Most obvious impacts are to marketing, staffing, and cash flow. In the context of strategic planning, seasonality is a key consideration when identifying key performance indicators (KPIs) and setting performance targets. The purpose of this document is to provide background on how to handle seasonality with the SAP Strategy Management (SSM) solution.

2 Introduction

For an organization to achieve its strategic goals, detailed operational and tactical positions have to be consolidated to provide a single, comprehensive view. *Time* is just one dimension that furnishes an important context of operations. The challenge is trying to calculate a variety of time considerations that users will ultimately want, in a way that brings insight and understanding for making better, actionable decisions.

The dimension of time is used when monitoring data to provide context for comparison and analysis. Time as a dimension commonly is expressed as a hierarchy: days roll into weeks, weeks into months, months into quarters, and quarters into years. The most basic reports compiled by organizations compare results based on similar time aspects like: this week versus last week, today versus yesterday, this quarter versus same quarter last year, as just a few examples.

Even when reported elements fit a hierarchical construct, what happens if some KPIs are daily in nature (revenue), while others are monthly (fixed costs) or quarterly (customer satisfaction)? Should fixed costs and customer satisfaction be broken down to daily granularity so that they can be in the same report as revenue data? Or will revenue be converted to a monthly measure and lose the daily detail?

A similar question arises when comparing Actual values to Target values, which is an essential element to successful strategy management. Many KPIs' Actual values are collected at a more detailed granularity of data than their associated Target values. For example, customer complaints may be tracked daily, but its target is set quarterly or even yearly.

Seasonality adds an additional layer of complexity to these issues. One must consider not only periodicity issues among KPIs, but also how seasonality may impact the interpretation of the data.

3 The Step By Step Solution

3.1 Mixed Periodicities

Most organizations face the issue of having KPIs of mixed periodicities. Some may be monthly, others quarterly or even yearly. The need for multiple periodicities is many. It may stem from the availability of data, or that different departments within an organization require varying periodicities for effective decision making. For example, HR KPIs may be monthly or quarterly in nature, while IT may need daily or even hourly KPIs. While the SSM solution handles the aggregation (and disaggregation) of periods along the hierarchy defined by the fiscal calendar, it is essential to consider the periodicities of KPIs when compiling them into a single scorecard view.

A scorecard is a reflection of a point in time. It is a performance snapshot of a given week, month, quarter, or year. The KPI view of the scorecard also reflects a single point in time. When tackling the issue of mixed periodicity KPIs, it is generally recommended to create scorecards that reflect the periodicity of the KPI with the least detail; in other words, the KPIs with the lowest granularity of detail should be aggregated up.

Be aware of what happens when a scorecard with a lower level of granularity is created (such as monthly) when some of the KPIs are quarterly or yearly. When drilling down on the time dimension, a yearly KPI's value will be evenly distributed into four values for a quarterly view, twelve values for a monthly view, etc. These disaggregated values may not accurately represent the KPI.

3.2 Variations within Actual and Target Values

A KPI's Actual and Target values are frequently of different periodicities. Typically, the Actual values are collected at a more frequent periodicity than Target values are set. While this is acceptably handled within the SSM solution, it requires the owner of the scorecard to determine which periodicity to use when setting up the scorecard. Similar to the mixed periodicities issue above, it is recommended to use the periodicity with the least amount of granularity.

Another option is to consider setting Targets more frequently. It is not uncommon for organizations that are new to strategy management to set yearly targets as a baseline. For these organizations, however, it is especially important to consider more frequent, scaled targets. Consider the following example. An organization sets an initial annual target of $1M revenue. It may hinder employees' enthusiasm for embracing strategy management when this is rolled out, as $250K in the initial quarter may seem unachievable. The organization would most likely benefit from a scaled quarterly target, such as $150K, $200K, $300K, and $350K. This scale should ramp up towards the end goal so that employees are willing and able to meet the targeted end goal.

3.3 Seasonality

Seasonality is a factor to consider when target setting. If annual targets are what an organization if really concerned with, as in the example above, an average quarterly target or even a scaled target may not suffice to accurately reflect performance where seasonality plays a role. Seasonality must be considered when setting targets to clearly reflect performance throughout the year. If 80% of revenue is expected within a particular quarter, then targets should be set accordingly. Industries that are heavily influenced by seasonality demand target setting to reflect the fluctuations and cycles.

Where the seasonal changes are regular, an organization can deseasonalize metrics by using data compiled over several years to calculate seasonality indices. These seasonality indices are then used in conjunction with the regular KPI targets to create a deseasonalized or adjusted KPI target.

4 Key Differences How SSM and BI Handle Time

4.1 Time Intelligence

SAP Strategy Management and SAP BI have fundamentally different ways approaching time and it is important to understand those differences when working with Periodicity.

SAP BI provides datasets in InfoCubes, which are relational tables that will contain at least one time characteristic and usually more. PAS, in SSM, has no fixed characteristic or dimension for time. Instead it can aggregate and divide the measure value into any other time periodicity on the fly using an internal calendar. This “Time Intelligence” feature means that all time conversions are automatically based on that internal calendar allowing for hundreds of time conversions.

Because of these differences in how time is handled, it is strongly recommended to review the information on how to bring data into the SSM Application Server from BI.

5 Conclusion

5.1 Setting Targets is as important as collecting Actuals

Seasonality needs to be considered when setting targets for key indicators. Ultimately, an organization needs to stay focused on real business issues, not reacting to anomalies in data or metrics. Target setting is a crucial aspect of strategy management, as essential an element as collecting Actuals. If an organization is going to embrace the concepts of strategy management, it is critical that proper emphasis be placed on accurate target setting. Defining targets with more granular periodicities may be more work up front, but the outcome is a more accurate snapshot of how the organization is performing. Red flags and potential risks to meeting the annual performance target may be identified earlier, if targets are set accurately and more frequently.