PREDICTIVE PERFORMANCE MANAGEMENT

Continually improve performance by applying the power of analytics

THE POWER TO KNOW®

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Executive summary

Every organization manages performance, in one way or another, in an attempt to optimize the organization as a whole while meeting the needs of internal and external stakeholders. However, surprisingly few organizations exploit performance management to the extent that technology can now support it and the payback justifies it.

Performance management has three components. At its most elemental level, performance management includes **reporting**. What's going on across the organization? Next is **management** and **control** to align strategies, resources and finances. Even greater benefits are seen when performance management is not just about monitoring performance, but continually **improving** it, having accurate answers to critical questions, such as:

- Do you know which measures drive the business – and which do not?
- Do we know why problems occurred?
- Do we know the right course to take?
- Is everybody aligned with enterprise-level strategy?
- Are we just monitoring the dials or moving them?
- Are we acting or reacting?

Each of these performance management components is critical. This paper focuses on improving performance. By integrating analytics into performance management, organizations can reveal whether their "key" performance indicators really are key, what drives them, how they influence each other and how they contribute to organization-level goals. You can dramatically improve planning, resource allocations and decision making; align employees' priorities and incentives with top-level strategic objectives; see future possibilities sooner; and set course accordingly. Predictive analytics reveal future outcomes that are likely to result from actions and decisions – those made in the past and ones you make today – so you can set course for maximum advantage.

Integrating analytics into performance management represents a quantum leap, but an achievable one. The result? Performance improvements on a grand scale.

Report performance to gain financial, operational and performance transparency.

Manage and control performance to align strategies, finances and resources.

Improve performance continually through new insights and more accurate predictions.

Predictive performance management

A chief executive of a major bank closely monitored four key metrics that shaped the department's top-line metric – or so it would seem. The relationship seemed plausible enough.

So why were gains on those four metrics not driving commensurate gains in overall performance?

On closer inspection, statistical methods revealed that there was actually no correlation between the metrics under watch and the goal being sought. Time and resources had been spent for little real advantage in the big picture.

The bank had a performance management system with a dashboard of red, yellow and green indicators. The system distributed reports to let managers know where they stood and what targets they were expected to meet. Managers allocated resources and made decisions based on those reports. Why weren't they achieving the results they expected?

This story is not unique. Past performance is often a weak guide for driving forward. Dashboards, however colorful and compelling they might appear, might be revealing insignificant or partial truths instead of valid drivers of success.

If sales of Product A went up 25 percent in the northeast stores this week, should you stock all stores nationwide with bumper crops of Product A? That depends. Did sales go up because the full-page ad appeared in *People* magazine last month, or because Product A was priced at cost for the weekly special, or because preferred Product B has recently been recalled by the manufacturer? The answer isn't necessarily found by human intuition or superficial analysis alone.

Furthermore, the "right" decision from the 10-foot view might very well be the wrong decision when viewed from 10,000 feet. The decision that best benefits my group might be gained at your expense. The decision that keeps a marketing campaign under budget might alienate good customer prospects and ultimately cost more than it gains. The cutback that saves millions in IT network infrastructure could be costing untold more millions in lost Web revenue because the site is sluggish and unreliable. Would you know?

Informed decisions require intelligence gleaned from analytics across dimensions, with predictive insight to understand the impact of possible decisions. If present methods of performance management don't provide that depth of intelligence – and aren't achieving the desired results – executives should be asking the tough questions.

Do you know which measures drive the business and which do not?

The organization might be assiduously monitoring key performance indicators (KPIs) that don't actually have much impact on its goals. Managers might be burdened with managing a multitude of irrelevant KPIs. They waste time, money and resources focusing on the wrong things.

Do we know why problems occurred?

Reporting systems faithfully tell us "what is," but traditionally the "why" has required human instinct and intuition – both filtered and fallible – to determine the root cause of problems. Some cause-and-effect linkages will be self-evident, but not always. Even if you're sure of a link between metrics, do you know how strong the relationship is? Can you quantify and predict the impact of one on the other, especially in a dynamic context?

Do we know the right course to take?

Faced with a broad array of choices, organizations typically fall back on rules of thumb, timeworn decision rules or gut feelings, choosing decisions that appear safe, customary or intuitively best. What action should you take? To what degree? Gut instinct cannot answer those questions with precision.

Is everybody aligned with enterprise-level strategy?

Managers often drive toward strategy and metrics that support their business units rather than the organization as a whole. Success in one department may be cannibalizing success in another. Without a clear picture of the interdependencies, managers won't know how to allocate resources to maximize organizationwide results, and executives won't necessarily be inspired to reward them for big-picture altruism.

Are we just monitoring the dials or *moving* them?

If the organization doesn't have solid answers to the questions above, this answer won't be any stronger. Only with a clear view of what matters and what influences it can an organization know where to focus its resources to create positive change rather than just hope for it.

Are we acting or reacting?

Do you have the luxury of time, of taking months or years to determine if you are on course? Dozens of opportunities may arise and disappear in that time, and valuable midcourse adjustments would be missed.

What if you could confidently *anticipate* the result of a strategy in advance?

What if you could *test* various scenarios and choose the best of all possible courses?

What if organizational systems could automatically *learn* from past results and use that knowledge to realign indicators and improve actions the next time around?

The organization that could successfully do these things would have a clear advantage, yet few have capitalized on the (readily available) means to do it.

Improving performance management

Every organization tracks performance, in one way or another, and most set targets and budgets based on the expected outcomes of that performance. However, surprisingly few organizations exploit performance management to the extent that technology can now support it and the payback justifies it.

"Performance management" as a term is loosely used to describe activities related to tracking organizational performance. At its most elemental level, performance management includes **reporting** past performance. What happened across the organization?

This question is typically answered by dashboards or query and reporting tools, based on data from multiple systems. Information is integrated and validated across the organization to ensure quality, consistency and completeness, and is communicated using dashboards and at-a-glance reports. The goal is to gain financial, operational and performance transparency.

The next key component of performance management is about **managing** and **controlling** performance, perhaps including the adoption of methodologies such as balanced scorecard, Six Sigma or Baldrige.

Strategy maps, scorecards and dashboards are widely used for executive teams to communicate and cascade strategy down to managers and their teams. Business units align through synchronized financial and operational strategies and embedded business logic, such as consolidation rules or marketing processes. Managers and employee teams collaborate across functions to achieve organizationwide goals.

The most sophisticated organizations will attain a quantum leap by integrating analytics into performance management to not just monitor performance, but proactively **improve** it. "What actionable insights are hidden in our vast resources of information?" "If we set this course, what is likely to happen?"

Correlation analysis identifies cross-effects among measures; modeling techniques reveal cause-and-effect relationships; optimization models improve the current state; and forecasts predict the future. Combining these insights, you can understand how a change in one area will affect the performance of others, how fluctuations in processes or activities will affect costs and profitability, and how to proactively set an effective course of action.

The organization can optimize operations with a deep understanding of what actually drives success – and continually improve the speed of intelligence, the agility of response and the performance management process itself. Each of these performance management components is critical. This paper focuses on how your organization can apply analytics within performance management to improve performance.

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Predictive performance management – the quantum leap

Performance improvement is achieved by strategically applying *analytics*, a suite of statistical methods that sifts through vast amounts of data to discover meaningful correlations, patterns and trends. Analytic techniques for modeling, forecasting and simulating potential outcomes answer critical business questions such as these:

- Why are these problems occurring?
- Where do I need to improve and by how much?
- What if I change course in this way, considering multiple variables?

Predictive performance management of this type is for organizations that embrace test-and-learn as a way to evaluate alternatives, rather than simply reacting and muddling through.

If asked, most organizations would say they use analytics to understand performance, and they would be right, to a degree. But there are many depths and flavors of analytics. And often analytics are applied to niche business issues but not at the strategic level. The broader the adoption and variety of analytics applied, the richer the insights and the more accurate the decisions.

The reporting and hindsight analysis of basic performance management are *deductive* in nature, explains Wayne Eckerson of The Data Warehousing Institute (TDWI). Business users must have some ideas of the patterns and relationships they are likely to find and then use query, reporting and OLAP tools to explore the data and validate their hypotheses.

Dashboards and scorecards take deductive reasoning a step further. They present users with a de facto set of hypotheses in the form of metrics and KPIs that users examine on a regular basis.

Predictive analytics works the opposite way: it is *inductive*. It doesn't presume anything about the data. Rather, predictive analytics lets data lead the way. Drawing primarily on statistics, but also employing contributions from machine learning, neural computing, robotics, computational mathematics and artificial intelligence, predictive analytics helps you explore appropriate subsets of data to ferret out meaningful relationships and patterns. Predictive analytics is like an 'intelligent' robot that rummages through all your data until it finds something interesting to show you.[1]

1 ***Predictive Analytics: Extending the value of your data warehousing investment,*** **Wayne W. Eckerson, January 2007.**

Predictive analytics can indeed show organizations some eye-opening things. They can identify the customers most likely to respond to next week's direct mail campaign, to place an order from the new catalog or to switch their phone carrier. Predictive analytics can also anticipate when manufacturing equipment or power distribution equipment is likely to reach the end of its service life, which healthcare protocols or college admission policies will yield the best outcomes, and which customers are likely to default on a bank loan.

Marketing groups were first to embrace predictive analytics to better understand customer behavior. Predictive techniques are commonly used to guide cross-selling, campaign management, customer acquisition, budgeting, forecasting and customer loyalty programs. Other functional groups are slowly discovering the value of predictive analytics for identifying unexpected opportunities and anticipating problems.

The most forward-thinking organizations are integrating predictive analytics with their performance management systems to add new levels of foresight, spanning business units and functions. For example:

- A leading bank uses SAS® to predict which customers are going to leave three to six months before they actually do, and with 80 to 85 percent accuracy. As a result, the bank has reduced customer attrition by 50 percent.
- Another leading bank used SAS to accurately identify the best candidates and best offers. As a result, the bank acquired 1.7 million new customers in a single year – its most successful year ever in new account recruitment.
- A manufacturer that uses Six Sigma applied SAS analytics to gain new insights into physical processes, ultimately decreasing the scrap ratio from 15 percent to 1.5 percent.
- Another manufacturer, applying demand forecasting techniques to its planning processes, reduced the gap of over-/under-supplying its stores by 10 to 15 percent.
- A regional medical center modified patient care protocols while monitoring 50 KPIs across the institution with SAS analytics and reduced average patient stay by nearly a day while maintaining the highest levels of patient care. This gain increased bed capacity as much as if the hospital had added 10 to 15 percent more beds.

"With such stellar credentials, the perplexing thing about predictive analytics is why so many organizations have yet to employ it," says Eckerson. "According to [TDWI] research, only 21 percent of organizations have 'fully' or 'partially' implemented predictive analytics, while 19 percent have a project 'under development' and a whopping 61 percent are still 'exploring' the issue or have 'no plans.'"[2]

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2 *Predictive Analytics: Extending the value of your data warehousing investment,* Wayne W. Eckerson, January 2007.

Guide to analytics

Descriptive analytics clarifies important relationships using such techniques as: analysis of variance, multivariate analysis, link analysis and more.

Exploratory analysis enables users to dynamically explore data and text to uncover trends, spot outliers and gain understanding that might not be derived from other analytical methods.

Market research reveals information about market conditions through such techniques as conjoint analysis, discrete choice analysis and multidimensional preference mapping.

Simulation and *predictive modeling* let you ask "what if" to assess potential customer behaviors, operational outcomes or other future conditions.

Forecasting accurately estimates future conditions – such as sales, staffing needs, inventory requirements and warranty reserves – so you can proactively prepare.

Econometrics applies statistical methods specifically to economic data, problems and trends – providing a low-risk way to evaluate and fine-tune policies before putting them into practice.

Optimization identifies the most effective combinations of factors (such as price/media mix/customer/offer/channel) to produce peak results within known business constraints.

Text mining uncovers hidden relationships and patterns in textual data, such as e-mail or notations on service records.

Experimental design techniques quantify the effects of many different factors on outcomes – not just those that are correlated with the outcome, but those that cause success or failure.

Quality improvement analysis helps you understand and troubleshoot processes, rapidly identifying the root causes of problems to make improvements in processes and quality.

Each technique delivers a different kind of insight and can be applied to multiple business problems. SAS integrates all these techniques into a unified business intelligence platform and enables business users to leverage their power in performance management.

Five steps to predictive performance management

Organizations that don't capitalize on the broadest possible range of analytics will have weaker answers to all those questions set forth earlier – "Are we measuring the right things?", "What course do we take?", and so on. However, many organizations have some more fundamental shortcomings as well. In an April 2006 survey of 1,143 organizations across all industries worldwide, respondents pointed to a number of limitations.[3] For example:

- Only 50 percent integrated data from ERP, general ledger systems or similar systems.
- Only 40 percent had access to cleansed and rationalized data for analysis.
- Only 42 percent could communicate goals through strategy mapping.
- Only 35 percent could see cause-and-effect impacts across the organization.
- Only 43 percent used forecasting, optimization, simulation and/or correlation analysis to predict the future state of operations.

Organizations that seek sustainable gains will want to address these limitations, augmenting their performance management systems with the ability to do these things:

1. Understand performance from an organizationwide perspective.
2. Validate the strategy and establish metrics that matter.
3. Align people and functions with organizationwide strategy.
4. Predict potential outcomes with a high degree of confidence.
5. Monitor and correct course for continuous improvements.

Let's take a high-level look at each of these capabilities.

3 *Performance Improvement Survey,* BetterManagement.com, April 2006.

1. Understand performance from an organizationwide perspective

Issue: No good decisions come from bad data. Dashboards, scorecards, and strategy maps are effective only if they represent reality. Analytics deliver meaningful insight only when they start with meaningful numbers. Yet data quality remains a huge concern. More than one in four companies surveyed by SAS cited data inaccuracy as a major obstacle to performance improvement. Fewer than half perform data cleansing and rationalization.[4]

Solution: An effective performance management system seamlessly integrates information from across functional areas, such as finance, marketing, customer service, sales, human resources, IT, etc. Data should be cleansed (for accuracy), normalized (for consistency), rationalized (for relevancy) and integrated (for completeness) across multiple systems. The system should have access to shared data warehousing with deep data mining capabilities, not just limited pass-through of information from application to application.

The SAS business intelligence platform provides data cleansing and data integration, the foundation for complete, fully integrated solutions to support performance management. The SAS platform can read data from virtually any source in virtually any form, consolidating operational data from disparate systems into a powerful information resource. The result is a consistent version of the truth, delivered in a role-specific way, so you can track activity and results in alignment with organizationwide strategy, not just department-level objectives.

2. Validate the strategy and establish metrics that matter

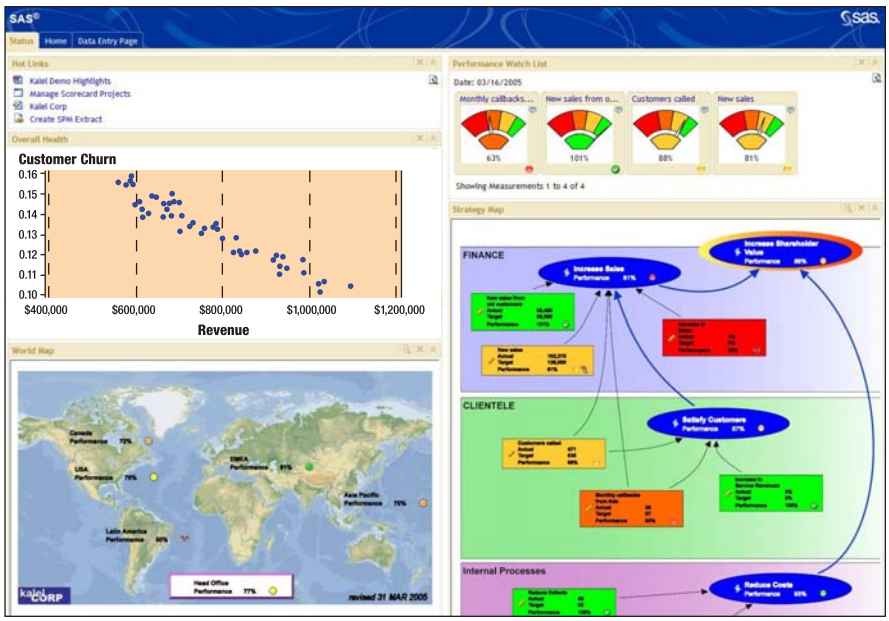
Issue: A strategy, no matter how brilliant, will not be effective if not effectively executed, and that requires a keen understanding of the business. Every aspect of an organization is interlinked; analyzing the issues can be extremely complex. Some companies measure hundreds of metrics that may or may not influence success, or might not influence success in quite the ways imagined.

Solution: Exploratory data analysis (clustering and correlation, for example), when combined with predictive analysis (such as regression and decision trees), lets you probe historical data to detect previously unknown patterns that might indicate important relationships. That is, the movement of one variable may have been caused by the movement of another. Using advanced modeling techniques, these causal relationships can then be isolated and highlighted.

These capabilities can help uncover cause-and-effect relationships. Regression analysis is a common form of predictive modeling that can reveal previously unknown relationships between KPIs in an easy and intuitive way. In the process, it reveals broader and deeper insights into the way an organization really operates. To further hone your strategy, a variety of analytical methods such as neural nets, genetic algorithms, experimental design and optimization can be applied.

4 *Performance Improvement Survey,* BetterManagement.com, April 2006.

Once these potential relationships are known, organizations can base their hypotheses on a more fact-based understanding of how KPIs affect each other. They can quickly test hypotheses without waiting months or years – and use the insights to guide ongoing optimization efforts.



Example 1. Correlation analysis can reveal previously unknown relationships between metrics, making it clear which metrics are important and where to set thresholds. This analysis shows a tight correlation between customer churn and total revenue.

Once cause-and-effect relationships are determined and validated, their relationship to one another and the strengths of the relationships can be displayed. Users can better predict potential outcomes based on achieving certain results.

3. Align people and functions with organizationwide strategy

Issue: To be effective, corporate strategy must first be clearly articulated, translated into measurable results and then communicated effectively to everyone in the organization. Everybody must understand the vision and how day-to-day activities contribute to it. Yet most large organizations function in a constantly changing environment of interdependencies – a multitude of related variables that affect each other on parallel levels, feed into higher levels and ultimately determine overall performance and profitability. How do you provide visual clarity to this complexity?

Solution: A strategy map is designed to illustrate these dynamics, but even when it is used within an organization, it may not reflect reality. A strategy map *that leverages analytics* can validate interdependencies and also show the strength of each relationship. Viewers can readily see which results have the greatest impact, so it's clear where to focus and prioritize their efforts.

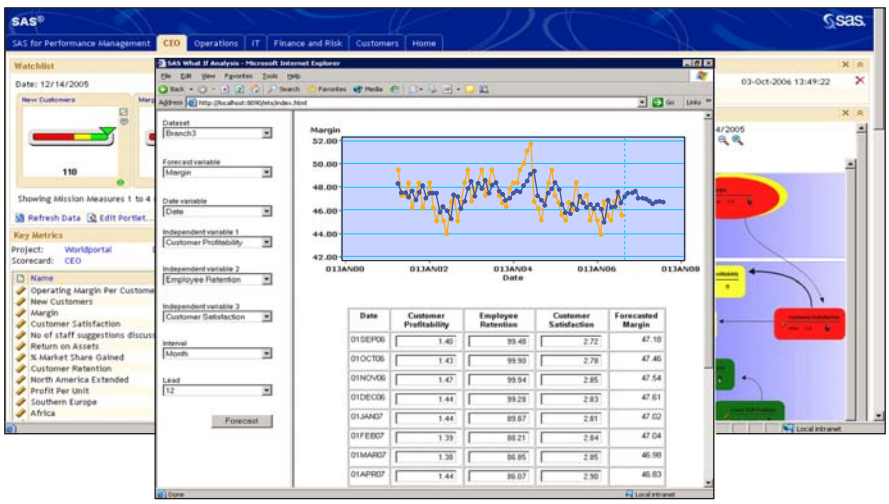
4. Predict potential outcomes with a high degree of confidence

Issue: True competitive differentiation requires more than querying and reporting on past events, more than basic calculations that deliver hindsight. Without modeling scenarios and determining where to focus efforts, organizations fly blind.

Solution: With broad and deep analytical power, you can predict future outcomes of interest, explore and understand complex relationships in data, and model behavior, systems and processes.

Forecasting helps detect trends to determine what lies ahead, so you can accurately adjust pricing, inventory levels, staffing and other resources for effective operations. Modeling what-if scenarios and running simulations lets organizations try out alternative strategies, so managers can confidently select a positive course of action without having to wait for wisdom from hindsight.

Applying a diversity of analytics to business problems enables managers to more quickly anticipate future challenges and opportunities, assess the impact of changing KPI values, and respond more quickly with fact-based decisions.



Example 2. Forecasting and "what if analysis" help you model scenarios to determine the best course of action.

5. Monitor and correct course for continuous improvements

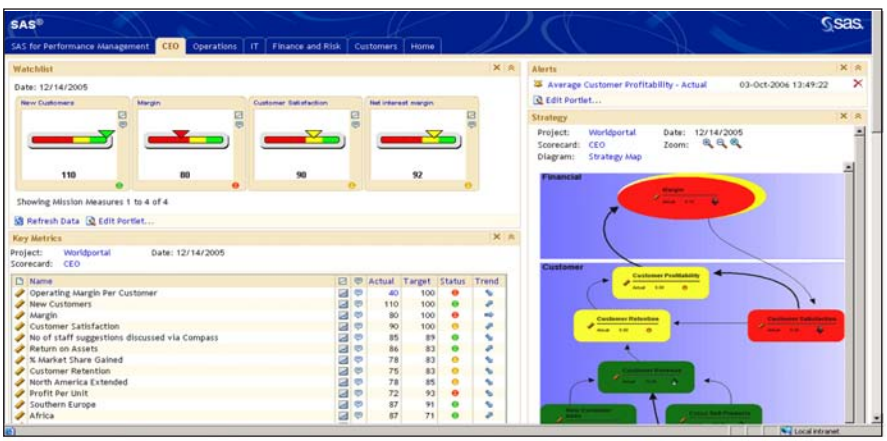
Issue: Once key performance indicators are established in line with an organization's strategy, and targets are set, a mechanism must be in place to continually monitor results: a dashboard.

The performance management system should also be self-learning and self-tuning, able to automatically capture and share best practices, benchmarks and experience. Only by understanding the full context and impact of historical actions can an organization identify early indicators of success or failure and collaborate on options by tapping the knowledge of the entire organization.

Solution: To monitor performance, a good dashboard conveys the current health of KPIs and triggers a call to action when results are not meeting expectations. The SAS dashboard alerts users via special graphic indicators or e-mail when results are falling below targets. It contains a number of gauges and tables as well as an alerts window that displays issues requiring immediate attention.

To proactively correct course, a successful performance management system empowers individuals to make effective decisions that apply past knowledge as part of a strategic learning loop. SAS automatically leverages information from interconnected business processes to continuously update internal knowledge and best practices. The system is always self-optimizing, producing a higher level of performance intelligence than previously possible.

Managers and individuals can respond to changing market, customer, supplier and revenue conditions as they happen, not just as historical information from last quarter. In the process, this self-tuning capability supports the ability to be proactive rather than reactive in daily operations.



Example 3. A scorecard combines the measurement of KPIs with an organization's strategy deployed to the entire organization.

- Performance management efforts will fail if they are set up as a one-time event to be displayed in a static scorecard, or if they evaluate the performance of individual departments or geographies in silos. Performance management drives superior performance only when it uses a continuous process to evaluate the entire organization and the roles played by all of its interconnected parts.

Conclusion

There is a big difference between formulating a strategy and executing it. Executives set objectives and devise reasonable strategies to achieve them, but more often than not, implementing them proves problematic. An estimated 90 percent of organizations fail to fully implement their strategies.[5]

There are many contributing factors, such as changing priorities and cultural issues, but a consistently recurring flaw is the misapplication or lack of information needed for effective performance management.

Predictive analytics embedded into the performance management process empowers organizations to gain greater insights from their past – seeing where they have been and why – and then identify the best strategic actions for today and the future. With predictive capabilities, executives, managers and employee teams can focus on what really matters, see outcomes sooner, set more effective directions and change course quickly.

In an April 2006 survey of 1,143 organizations across several industries worldwide, respondents who had implemented analytic technologies reported achieving greater success in the areas of innovation, competitive advantage and agility – nearly twice as much as those without analytics.[6]

Without analytical techniques and the resulting structured guidance, organizations would never know just how much they could have improved performance if only they had carried out different action plans.

By adding analytics to your performance management, you can:

- Establish metrics that matter.
- Verify the defined strategy.
- Identify root causes of issues.
- Allocate the right resources.
- View causes and effects on KPIs.
- Monitor, measure and close the loop.
- Become more agile with more foresight.
- Quantify, qualify and prioritize changes.
- Identify patterns and spot trends.
- Learn from previous actions.

From SAS, the leader in analytics

SAS is the leader in business intelligence and analytical software and services. Customers at 42,000 sites use SAS software to improve performance through insight from data, resulting in faster, more accurate business decisions; more profitable relationships with customers and suppliers; compliance with governmental regulations; research breakthroughs; and better products and processes.

Only SAS offers leading data integration, storage, analytics and business intelligence applications within a comprehensive enterprise intelligence platform. Since 1976, SAS has been giving customers around the world THE POWER TO KNOW®.

5 Dr. David Norton, co-author of *The Balanced Scorecard: Translating Strategy into Action,* at the Balanced Scorecard Collaborative Summit on Nov. 7, 2006.

6 *Performance Improvement Survey,* BetterManagement.com, April 2006.

SAS® for Performance Management

SAS provides the broadest, deepest range of performance management capabilities available – the means to not only manage performance, but to actively improve it. The SAS broad range of predictive analytics capabilities enables you to identify, quantify and prioritize improvement opportunities, mitigate threats and measure results. Integrated forecasting and simulation, coupled with correlation analysis, enable you to anticipate the future state of operations. SAS can forecast and provide a confidence interval for its projections.

- *Predictive scorecarding* capabilities let you tie traditional scorecard features, such as traffic lights and speedometers, to powerful predictive analytics. SAS can forecast and provide a confidence interval for its projections.
- An integrated solution for *financial planning*, *budgeting and reporting* synchronizes financial and operational strategies for collaborative development of scenarios and budgets.
- *Dashboard* visuals provide at-a-glance access to the current status of KPIs, with automatic alerts and visual representation of cause-and-effect relationships.
- *Strategy maps*, defined by your chosen strategy rather than dictated by available data, enable you to truly focus on where the organization needs to go.
- *The SAS Enterprise Intelligence Platform* brings data integration, intelligent data storage, business intelligence and analytics into a single, unified platform.
- Integrated *profitability management* identifies the true value of customers, products and channels, creating highly accurate profitability metrics from detailed transactional data.
- *Activity-based management* provides a complete view of cost and cost drivers, so you can reduce costs without compromising profitability.
- *Focused departmental solutions* support tailored performance management in various functional areas, such as IT, human resources, finance, marketing and procurement.

To find out more about SAS solutions for performance management, visit **www.sas.com/solutions/pm**.

The SAS Enterprise Intelligence Platform provides a consistent, accurate view of information throughout the organization – the foundation for sound performance management efforts.

SAS® Enterprise Intelligence Platform

The performance management capabilities described in this paper are available on the unified SAS® Enterprise Intelligence Platform. With this platform, data that currently resides in a multitude of silo systems and purchased databases becomes part of a unified body of corporate knowledge. The integrated knowledge base is continually updated, validated, reconciled and managed for integrity.

The knowledge base – "a single version of the truth" – supports meaningful analysis and performance management that spans operational units, customer groups and lines of business. Deep insights revealed by analysis are securely shared with authorized users across the corporate intranet – presented in exactly the right format and depth for their unique needs.

What's the best way to implement analytic performance management?

As an enhancement to SAS® Strategic Performance Management. SAS has created a service framework called *predictive performance management* (PPM) within the scorecarding and strategy map product known as SAS Strategic Performance Management. The PPM service runs in the background of the performance management solution, adding correlation and regression analyses and predictive techniques to the existing strategy map, dashboard and scorecarding applications.

With a preview service from SAS. A SAS consultant can demonstrate SAS predictive performance management as an introductory service, using three standard KPIs and additional KPIs unique to your organization. First, correlation analysis will enable you to uncover and analyze previously unknown relationships between KPIs in an easy and intuitive way. Once significant relationships are quantified, regression analysis will predict outcomes of strategic hypotheses. This service dramatizes how predictive analytics can add value without requiring a commitment to buy the solution.

As a project of your Business Intelligence Competency Center. A Business Intelligence Competency Center (BICC) is a cross-functional team with a permanent, formal organizational structure and executive sponsorship. This center of excellence plans and prioritizes the organization's business intelligence (BI) initiatives, manages and supports those initiatives, and promotes broader use of BI throughout the organization through application design, user training and technical support.

A BICC provides a central location for driving and supporting your organization's overall performance management strategy. Centralizing these efforts ensures that information and best practices are communicated and shared through the entire organization so everyone can benefit from successes and lessons learned. As such, a BICC is an excellent avenue for implementing analytics-based performance management.

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