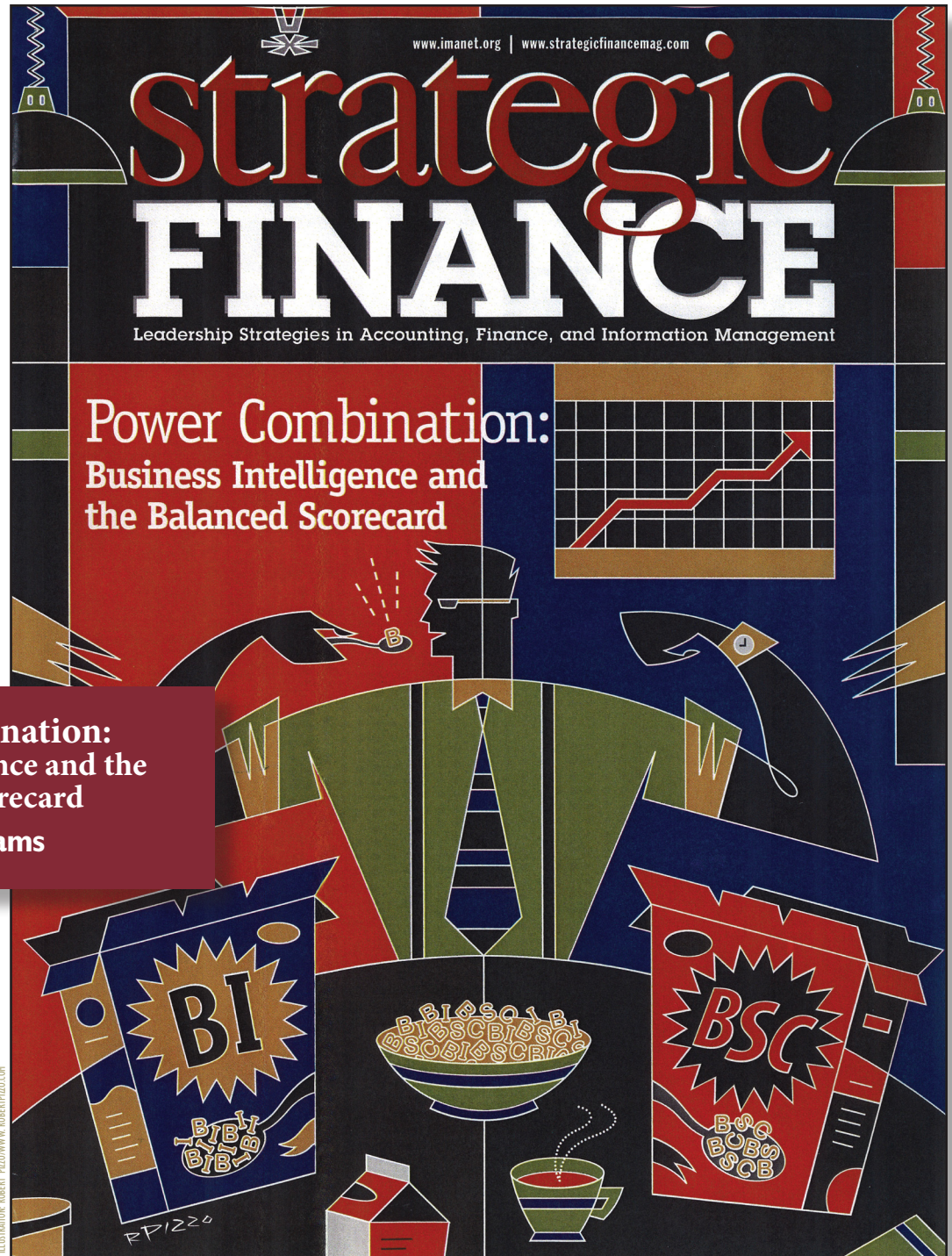


Data Warehousing

Business Intelligence

Performance Management Solutions



**Power Combination:  
Business Intelligence and the  
Balanced Scorecard**  
**Steve Williams**

## If companies align balanced scorecards and business intelligence, they can achieve a performance management system that delivers superior results.

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The concept of performance management isn't a new one, though modern management constructs and innovative IT tools have given it new cachet. We can trace its roots to the beginning of the Industrial Age, and, in his 1973 book, *Management: Tasks, Responsibilities, Practices*, Peter Drucker discussed management's responsibility for performance, noting that:

- “A business management has failed if it fails to produce economic results. It has failed if it does not supply goods and services desired by the consumer at a price the consumer is willing to pay (emphasis added).”
- “Business enterprise has only one true resource: man. It performs by making human resources productive (emphasis added). It accomplishes its performance through work (emphasis added). To make work productive is, therefore, an essential function....To make the worker achieving...is a measure of the performance of an institution (emphasis added).”

In these quotes, we see that Drucker thought in terms that are arguably synonymous with the four balanced scorecard perspectives: financial, customer, operations, and learning. See *Figure 1* for an illustration.

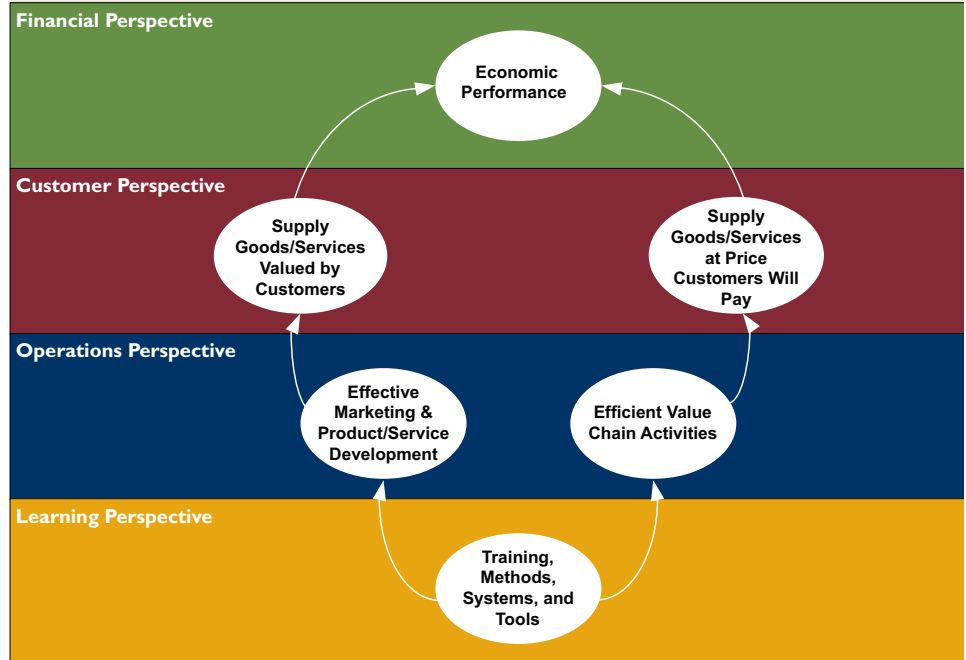
If we fast-forward to the 1990s, we see that performance management has become more structured. Building on management control systems concepts and seeking to redress the inadequacy of standard financial reporting for managing business performance, Robert Kaplan and David Norton developed the balanced scorecard (BSC). As they said in their 1996 book, *The Balanced Scorecard*, the BSC is used to “clarify and communicate strategy, but also to manage strategy.” It is also used as “the central organizing framework for important managerial processes: individual and team goal-setting, compensation, resource allocation, budgeting and planning, and strategic feedback and learning.”

As a management framework, the BSC isn’t intended to address all of management’s needs for business information, analytical tools, and decision support. For that, we need business intelligence (BI). BI is a structured, business-driven approach to leveraging business information to improve performance and profits. By integrating business information, analytical tools, and decision support with core value chain activities, companies can improve the efficiency and effectiveness of the processes that drive increased profits. The trouble is, business intelligence initiatives are often launched and managed separately from balanced scorecard initiatives, which can be inefficient and may have adverse strategic and economic implications. Accordingly, companies that use--or plan to use--the balanced scorecard and business intelligence would be well-served to align these related initiatives. Let’s explore the options and benefits of doing this, and I’ll illustrate some of the choices through a condensed case example.

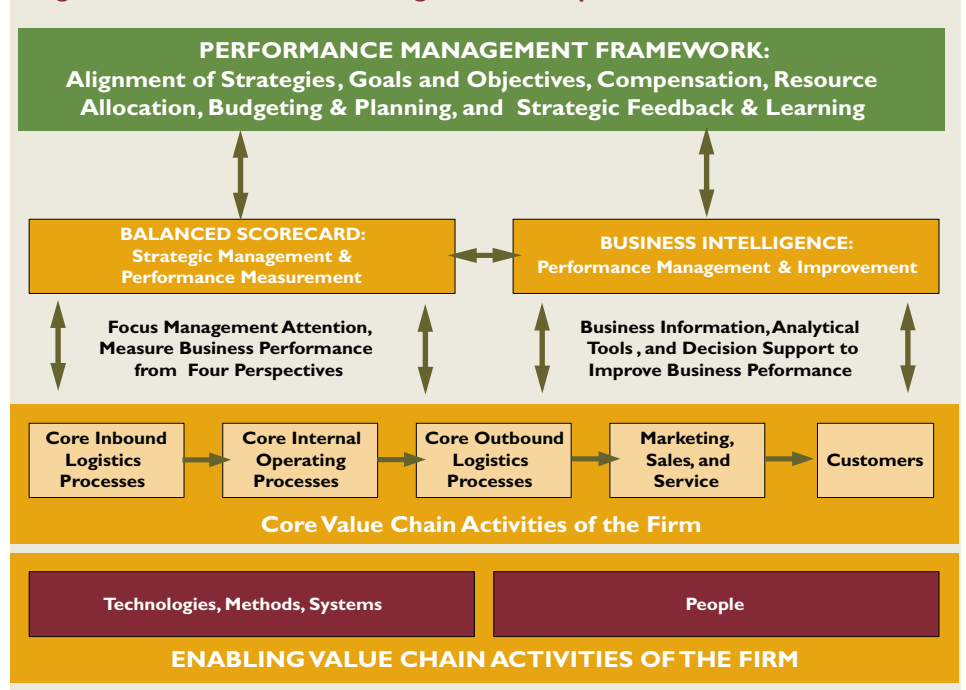
## COMPLEMENTARY PERFORMANCE MANAGEMENT FRAMEWORKS

A useful definition of performance management comes from Gary Cokins’s 2004 book, *Performance Management: Finding the Missing Pieces to Close the Intelligence Gap*. Cokins says that performance management is built on a combination of “performance measurement (strategy mapping, balanced scorecards, and employee communications) and managerial accounting and economics.” A central idea here is that performance management requires: (a) the ability to measure performance and (b) the ability to manage and improve performance, which requires business information and analytical tools, or

**Figure 1. Relating Drucker’s View of Management’s Performance Responsibilities to Balanced Scorecard Perspectives**



**Figure 2. Basic Performance Management Concept**



BI in short. This concept is illustrated in *Figure 2*.

Working from the top down within *Figure 2*, we see that performance management is concerned with alignment among a range of factors that drive a company’s strategic performance, such as goals, compensation, and resources. In support of performance management, the balanced scorecard:



1. Uses financial, customer, operational, and learning perspectives to communicate goals and objectives that support the business strategies of the firm;
2. Uses the four perspectives to report performance measures in relation to the goals and objectives; and
3. Delivers strategic feedback that's used to make/adjust resource allocations, budgets, and plans for future performance periods.

More broadly, the balanced scorecard framework serves as a strategic tool to focus management attention on a firm's core value chain processes. Bear in mind that the balanced scorecard is about performance measurement information, but it's a management framework that largely ignores such questions as:

- From what data sources does the performance measurement information come?
- Who within the firm is responsible for collecting and managing the information?
- What is the quality of the information?
- How does the information relate to other company information on the same processes?
- How much does it cost to prepare the scorecards each reporting period?
- What analytical tools can we use to improve the core value chain processes?
- How can we improve the efficiency and effectiveness of the decisions we make in the context of core value chain processes?

All this isn't a criticism of the BSC; rather, it suggests that a BSC can be improved by alignment with BI--which delivers business information, analytical tools, and structured decision support for improving the core value chain processes whose performance is the subject of BSC performance measurement. This is reflected in Figure 2 by showing BI at the same level as the BSC and by the linkages among BI, the BSC, and firm's core value chain activities.

Based on this analysis, we see that both the BSC and BI are necessary

**Table 1. Comparison of Balanced Scorecard and Business Intelligence as Management Tools**

Points of Comparison	Balanced Scorecard	Business Intelligence (BI)
<b>Vintage and Central Objectives</b>	Circa 1996. Communicate business strategies and align organization. Manage strategy execution. Measure organizational performance. Align goals, compensation, skills, resources, budgets, and plans.	Circa 1994. Leverage business information, analytical tools, and decision support techniques to improve core business processes that improve business performance and profits.
<b>Organizational Scope</b>	Mainly enterprise, with cascading performance measures to SBUs, divisions, departments, and so forth. Can be applied at SBU and lower levels independently of whether or not there is a higher-level.	Enterprise, SBU, division, function, departments, and so forth. Can be applied, and often is, at any of these organizational levels independently, though that may not be ideal.
<b>Customer Focus</b>	Mainly internal for all levels of executives, managers, and analysts.	Mainly internal for all levels of executives, managers, and analysts. Can also be used to augment product and/or service offerings to external customers.
<b>Key Management Linkages</b>	Links business strategies to key business processes and initiatives that drive strategy execution and business performance. Links strategies to goals, compensation, skill development, resources, budgets, and plans.	Links business strategies, core business processes and initiatives, and business information, analytical tools, and decision support techniques that can be used to improve those core business processes and achieve strategic goals.
<b>Information Strategy and Focus</b>	Primarily ad hoc, manual reporting of performance measures from financial, customer, operational, and learning perspectives. Some multi-dimensional analysis using BI tools, often using stove-piped approach to data acquisition.	Integrate multi-dimensional business information to support use of wide range of automated analytical tools and decision support techniques to improve the efficiency and effectiveness of core business processes that drive business results.
<b>Performance Management Focus</b>	Measure performance of strategically important business processes and take action to improve as needed. Use performance measures to guide strategic investments and plans.	Use well-managed enterprise business information, automated analytical tools, and modern decision support techniques to manage and improve core business processes that determine overall business performance and profitability.

for performance management, that they are complementary, and that they have different but mutually reinforcing value propositions. As I suggested earlier, it's important to understand how BSCs and BI are similar and where they are different so that each technique is used as intended and in a complementary way (see Table 1 for this comparison).

As Table 1 indicates, the balanced scorecard and business intelligence are very similar in their central objectives, organizational scope, customer focus, and key management linkages. Where they differ is that while BSCs are focused on reporting performance measures, BI is about managing and improving the underlying business processes that drive the performance measures. Accordingly, they should go hand in hand, and they can if certain alignment challenges can be overcome.

## TO ALIGN OR NOT TO ALIGN

Given the central objectives of BSC initiatives, as shown in Table 1, the impetus for adopting a BSC generally comes from the executive level on the business side of the house. In contrast, BI initiatives commonly originate with IT. That being said, both BSC and BI initiatives are aimed at leveraging business information to improve the performance of a company's core value chain activities. They are focused on the same business processes and generally the same business information. If they aren't coordinated, there's a good chance of incurring adverse consequences such as inefficiency, data redundancy, data quality and comparability issues, and IT maintenance cost increases. More broadly, lack of alignment may have adverse strategic and economic implications for the company. For example, absent a clear alignment with BI, the BSC initiative may create a false sense of security among business executives that they have the business information, analytical tools, and structured decision support they need to improve business performance, which could translate to lost performance improvement opportunities that may have a materially adverse profit impact.

For these reasons--which are risks--I recommend that companies make a deliberate decision about the degree to which they want to align their BSC and BI initiatives and then select an alignment option based on their starting positions with respect to BSC maturity and BI maturity as shown in Figure 3. The starting position establishes the available alignment options, which in turn determine the appropriate methods for achieving alignment and mitigating the adverse implications just described.

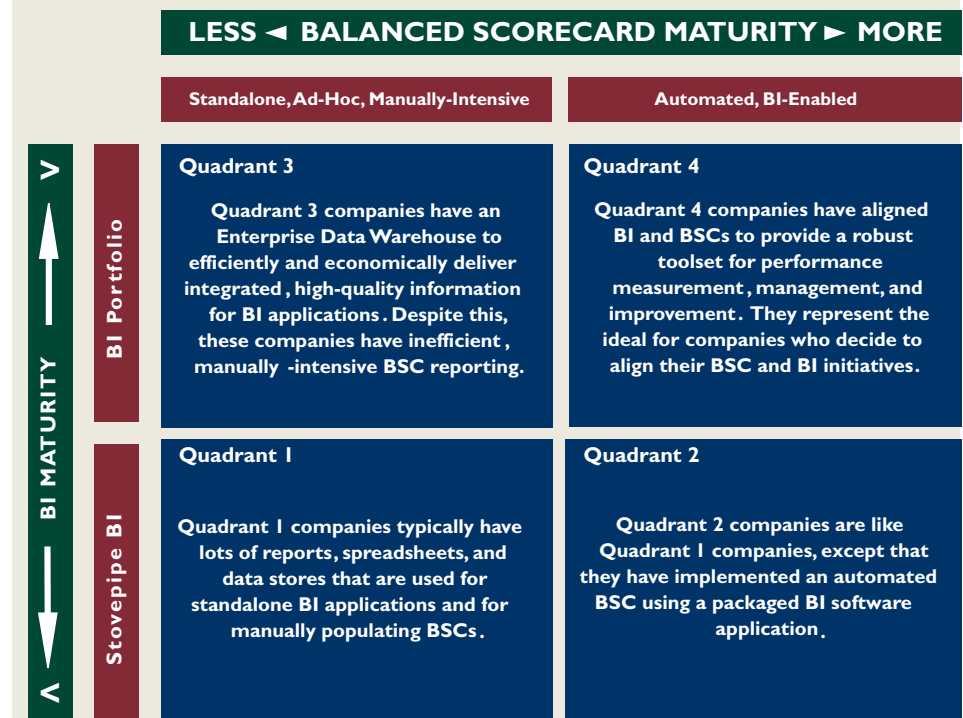
The starting positions depicted by Figure 3 create a range of possibilities for aligning balanced scorecard and business intelligence initiatives. Based on my consulting experience with leading companies in a range of industries, I believe that most companies are starting in Quadrant 1 or Quadrant 2 and that more companies are in Quadrant 3 than Quadrant 4. From these starting positions, there are nine available alignment options:

- Quadrant 1 companies can stand pat or migrate to Quadrant 2, 3, or 4;
- Quadrant 2 companies can stand pat or migrate BI to Quadrant 3, or they can migrate to Quadrant 4; and
- Quadrant 3 companies can stand pat or migrate to Quadrant 4.

These nine alignment options have different strategic and economic implications for performance management, as shown in Table 2.

Within Table 2, I have color-coded the combinations of starting quadrants and alignment options to reflect my judgment of the relative effectiveness of the different options from a performance management perspective. There are three "green" alignment options, and these can be pursued aggressively to the strategic and economic betterment of the

**Figure 3. Starting Positions for Aligning Balanced Scorecards and BI**



company. There are also three "yellow" alignment options that leave BI and the BSC unaligned. And there are three "red" alignment options that leave the BSC and BI unaligned and that, from a BI perspective, aren't sustainable in competitive industries.

Keeping in mind the potentially adverse impacts associated with unaligned BSC and BI initiatives, companies can systematically evaluate whether they would benefit from aligning these initiatives. This is the fundamental issue, and it boils down to the question: How important is a robust and efficient performance management system to the company's strategic and economic prospects? If it's important or very important, then companies can choose an alignment option based on their starting quadrant in Figure 3. Of these, only the "green" options will deliver a robust and efficient performance management system, so let's focus on those options or "alignment paths."

## A BUSINESS-DRIVEN APPROACH

Once a company has decided to align BSC and BI initiatives, its specific alignment path depends on the company's starting quadrant. While the target destination is the same--Quadrant 4--the specific activities required to achieve alignment will vary. Further, companies must understand what it means to have their BSC and BI initiatives aligned. I have found that companies with well-aligned BSC and BI initiatives will exhibit the following traits:

**Organizational Alignment.** The BSC and BI teams operate with clearly defined and mutually reinforcing charters that encompass in part a shared responsibility for linking BSC performance measurement with BI performance management and improvement.

**Business Process Alignment.** The BSC and BI teams are each focused on

**Table 2. Performance Management Implications of Different BSC and BI Alignment Options**

Starting Quadrant & Alignment Paths	Strategic Implications for Performance Management	Economic Implications for Performance Management
<b>Quadrant 1 - Stand Pat</b>	If BSC is done well, will be able to measure performance, but with stove-piped BI and BSC, there may be limited and/or poor quality business information and analytical tools to improve business performance.	BSC and BI initiatives will be more expensive than need be, and gaps in ability to manage and improve business performance may result in missed profits. No incremental BI investment required.
<b>Quadrant 1 - To Quadrant 2</b>	If BSC is done well, will be able to measure performance. Stove-piped BI may result in limited and/or poor quality business information and analytical tools to improve business performance.	BSC automation will deliver productivity gains for both business and IT professionals, but gaps in ability to manage and improve business performance may result in missed profits. Requires modest BI investment.
<b>Quadrant 1 - To Quadrant 3</b>	If BSC is done well, that, in combination with managing BI as a portfolio of business-driven releases, will result in ability to measure, manage, and improve business performance.	BSC will be more expensive than need be, but investment in BI will enhance ability to manage and improve business performance and reduce missed profits. Requires sustained BI investment appropriate to company size and resources.
<b>Quadrant 1 - To Quadrant 4</b>	If BSC is done well, that, in combination with automating the BSC and managing BI as a portfolio of business-driven releases, will result in enhanced responsiveness and enhanced ability to measure, manage, & improve business performance.	BI and BSC capital and operating expenses will be optimized and will create an BSC/BI asset that can be fully and productively leveraged to improve strategic control, profits, and business performance. Requires incremental BSC investment and sustained BI investment.
<b>Quadrant 2 - Stand Pat</b>	If BSC is done well, will be able to measure performance. Stove-piped BI may result in limited and/or poor quality business information and analytical tools to improve business	Gaps in ability to manage and improve business performance may result in missed profits. Requires no incremental BI investment.
<b>Quadrant 2 - Migrate BI to Quadrant 3</b>	If BSC is done well, will be able to measure performance. Managing BI as a portfolio of business-driven releases will result in enhanced responsiveness and enhanced ability to measure, manage, & improve business performance.	BI and BSC capital and operating expenses will reflect some redundancy and inefficiency due to separate BI and BSC data environments. Requires no incremental BSC investment. Requires sustained BI investment.
<b>Quadrant 2 - To Quadrant 4</b>	If BSC is done well, that, in combination with managing BI as a portfolio of business-driven releases, will result in enhanced responsiveness and enhanced ability to measure, manage, & improve business performance.	BI and BSC capital and operating expenses will be optimized and will create an BSC/BI asset that can be fully and productively leveraged to improve strategic control, profits, and business performance. Requires no incremental BSC investment, sustained BI investment.
<b>Quadrant 3 - Stand Pat</b>	If BSC and BI are done well, will be able to measure, manage, and improve business performance.	BSC will be more expensive than need be. Requires no incremental BSC investment.
<b>Quadrant 3 - To Quadrant 4</b>	If BSC is done well, that, in combination with automating the BSC and managing BI as a portfolio of business-driven releases, will result in enhanced responsiveness and enhanced ability to measure, manage, & improve business performance.	BI and BSC capital and operating expenses will be optimized and will create an BSC/BI asset that can be fully and productively leveraged to improve strategic control, profits, and business performance. Requires incremental BSC investment, sustained BI investment.

the same business processes for improvement and in the same order of priority. Each BI project will either: (a) improve the efficiency of the monthly BSC performance measurement, reporting process, variance analysis, and corrective action process and/or (b) deliver new business information, analytical tools, and/or decision support to enable management and improvement of the targeted business processes.

**Budget Alignment.** Funds for actual performance measurement, i.e., the scores in the scorecard, performance reporting via the BSC, and development of BI for performance management and improvement, are rationalized across the initiatives.

**Data and Technical Architecture Alignment.** The BSC and BI teams work within a unified data architecture and suitable technical architecture that enable automation of BSC processes and that deliver BI for managing and improving the business processes that drive the BSC scores.

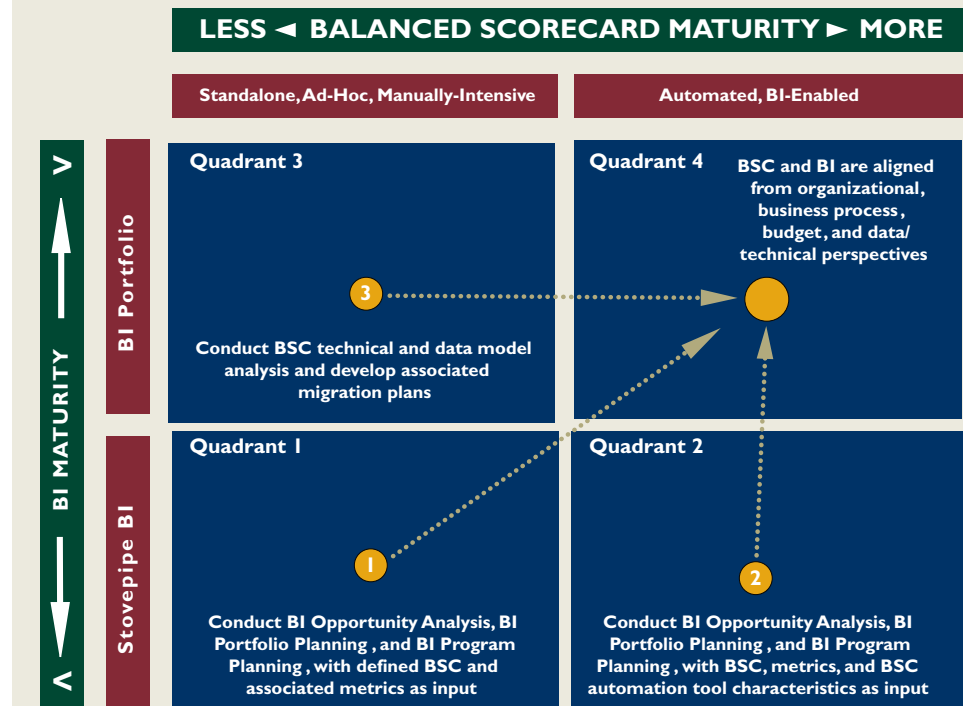
Think of the above characteristics as describing what it means to be in Quadrant 4 with respect to BSC and BI alignment. Given that, the next step is detailing the right alignment path and method based on a company's starting quadrant. Toward that end, *Figure 4* shows the key methods and activities required for the three "green" alignment paths.

In looking at *Figure 4*, we see that the starting positions in Quadrant 1 and Quadrant 2 are both less mature BI environments, and the only difference between these two starting positions is the degree of automation of the BSC. From these starting positions, we need to move upward on the BI maturity scale, which can be accomplished by using proven business-centric BI design and development methods. Central to business-centric BI development methods is the use of top-down BI opportunity analysis to identify and define business-driven opportunities to leverage BI to improve performance measurement, management, and improvement capabilities with respect to core business processes that drive business results. These opportunities are then prioritized into a BI portfolio, which is the basis for BI program plans. An alignment path from Quadrants 1 and 2--using a business-centric BI development method--is shown in *Figure 5*.

### THREE PRIMARY PROCESSES

Working from left to right across the top of *Figure 5*, we see three primary processes and specific business deliverables. The first process is to create a BSC and BI vision, which is done by analyzing BSC and BI opportunities to leverage business information, analytical tools, and structured decision support techniques to improve business performance. Since the key objective for both BSC and BI initiatives is performance improvement, we also need to have a high-level understanding of the core business processes that need to be measured, managed, and improved.

**Figure 4. Alignment Paths based on Starting Quadrant**



From these analyses, we can figure out common information requirements for both BSC and BI initiatives and align those requirements within the BI portfolio. For example, we wouldn't want the BSC to show different performance results than BI applications would show for the same process. By systematically identifying common needs for business information between BSC and BI initiatives, we avoid the inefficiency and data quality issues spawned by uncoordinated efforts. Further, by identifying the core business processes of interest for BSC purposes, we can align BI applications that offer not only performance measurements but also business information, analytical tools, and structured decision support for improving the core processes that drive the performance measures reported by the BSC. The result is a much more robust performance management asset.

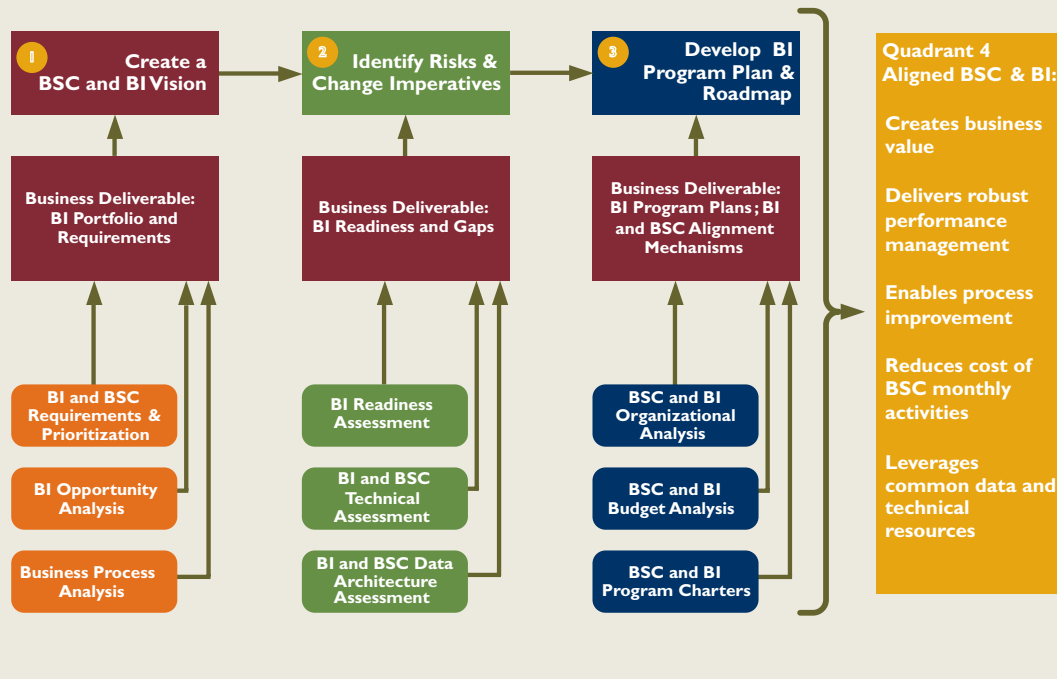
The second part of the alignment process is to identify risks and change imperatives associated with the balanced scorecard and business intelligence initiatives in general and the alignment process in particular. This is done via a structured BI readiness assessment, which looks at such factors as whether the company is leveraging the reported BSC performance measures and available BI and whether the company has the technical ability to deliver an integrated data and technical environment that would support both BSC and BI. The process also evaluates the BI and BSC data architecture from efficiency, responsiveness, flexibility, scalability, cost, and data quality perspectives.

The last process incorporates the results and deliverables from the first two processes into a comprehensive BI program plan that is customized for a company with respect to alignment between BSC and BI initiatives. The program plan provides a roadmap for achieving alignment between the initiatives and sets the stage for technical execution that ensures that BSC and BI information requirements are met.



**Figure 5. Application of The BI Pathway Method for Aligning BSC and BI Initiatives.**

*Establishing alignment consists of three primary processes that will identify and prioritize how the BI and BSC initiatives will be aligned to create a robust and cost-effective performance management capability*



3. Mapping the BSC performance measures into the overall data architecture and comparing them to business information that may have already been developed for BI applications aimed at the same core business processes as those being measured by the BSC.

4. Determining which BSC performance measures can be delivered from existing BI applications and which would remain to be captured from future BI applications. This approach will allow companies to assess options for delivering the automated BSC application, which could include: (a) immediately executing a project to fully replace the manual BSC, (b) automating some of the BSC by reusing performance measures that are already available from existing BI applications; or (c) pursuing a blended strategy of

incrementally automating the BSC by reusing performance

measures from BI applications and executing new BI projects to automate the remaining performance measures over time.

The decision about what priority to accord BSC automation within the BI portfolio involves some key tradeoffs. For example, is automating the BSC more important than going forward with a planned BI release aimed at improved customer acquisition and retention? Further, given the broad scope of the top-level BSC and all the cascading scorecards, there could be a lot of data to be acquired and integrated before the BSC would be complete, so would it be best to delay other BI efforts that provide better information and tools to improve performance or to automate the BSC to report performance? There are no standard answers for making these decisions, but BSC automation can deliver substantial productivity gains that can be estimated and traded off against the estimated profit improvement targeted for the various BI opportunities in the portfolio. In that sense, an automated BSC is just another opportunity in the BI portfolio.

## CONDENSED CASE EXAMPLE

PowerCo is a fictitious name for a \$2 billion electric utility that serves more than 500,000 customers in a large metropolitan area. The board of directors has established business strategies aimed at operating in a safe and environmentally sound manner, meeting electrical system reliability targets, building strong customer relationships, and containing operating costs.

Since 2002, PowerCo has used a balanced scorecard with enterprise-

## THE LAST ALIGNMENT PATH

Returning now to the three “green” alignment paths shown in Table 2, I have described a business-centric method to migrate from Quadrant 1 or Quadrant 2 to Quadrant 4—the target state of alignment between BSC and BI initiatives. The remaining “green” alignment path is from Quadrant 3 to Quadrant 4. The defining attribute of companies in Quadrant 3 is that they are more mature users and managers of BI. They have already used a business-centric BI method to define a BI portfolio, and they have established a supporting technical environment and data management processes. They will have captured business requirements for business information, analytical tools, and decision support techniques needed to manage and improve core business processes. They will have successfully executed quick-hitting BI projects that meet prioritized business needs within the defined BI portfolio. At the same time, Quadrant 3 companies are less mature on the BSC scale. Though they may have used the BSC management framework for several years and used it well, they are using ad hoc and largely manual means to populate periodic BSC reports. Given the interplay between these states of BI and BSC maturity, the alignment path from Quadrant 3 to Quadrant 4 mainly involves:

1. Assessing the BSC from top to bottom across all four perspectives to identify which business processes are the subject of BSC performance measurement.
2. Identifying all of the BSC performance measures in use, mapping those measures to data sources and determining the associated data definitions and business rules.



## Power Combination:

### Business Intelligence and the Balanced Scorecard

level performance targets and measures--or key performance indicators (KPIs)--that cascade down two levels to the major operating departments and their subunits. The balanced scorecard is a key element of PowerCo's broader performance management system (PMS) that includes strategic planning, goal setting, budgeting, operational planning, and monthly variance analyses. PowerCo's use of the BSC is mature, but the scorecard isn't automated, and some managers question whether the KPIs are the right ones. Further, given the size and complexity of the company, there's a lot of manual effort across the company every month to prepare the Excel spreadsheets that are the means of capturing and presenting the scorecards. The manual intensity of the BSC reporting process and the fact that there are many different people and data sources involved have



led some managers to suspect the quality of the data. On the BI front, the reporting functionality of PowerCo's enterprise resource planning (ERP) system was inadequate for their basic needs, so they created a separate reporting environment. The environment presents some basic financial reports - such as project cost reports, inventory status reports, and accounts receivable reports - that are heavily used as inputs to the monthly BSC reports, but it isn't a robust, scalable BI environment, and the various reports were developed from custom data extracts that have proliferated and made the overall reporting environment expensive to maintain.

Based on the above scenario, PowerCo can be considered a Quadrant 1 company, and it is from that starting position that it moved forward. When it did so, it initially focused on BI alone, which would have taken it from Quadrant 1 to Quadrant 3. It soon became apparent, however, that its BI and BSC initiatives needed to be aligned, so the alignment path was redirected toward Quadrant 4. The business executive in charge of the BSC and the IT executive in charge of the IT initiative worked together to ensure that the performance management information needs of the BSC were considered during the portfolio planning process. Using the business-driven process shown in Figure 5, business and IT executives and managers defined nine key BI opportunities, including one aimed at automating the BSC. Using a structured multifactor opportunity ranking approach weighted heavily toward business impact, they selected four of the nine opportunities for the three-year BI planning horizon. Automation of the BSC was the second-ranked priority.

Having established a BI portfolio that includes BSC automation, PowerCo is also applying a business-driven BI design approach to achieve

alignment from data architecture and technical architecture perspectives. In particular, the top-priority BI opportunity is to reengineer the existing BI reporting environment, which is financially oriented and leverages business information from the ERP system. Knowing the BSC performance measurement information requirements will allow the BI team to approach design and development of the new BI reporting environment from a unified BSC and BI perspective, creating a technical environment and databases that serve both BI and the BSC. Further, by factoring in the BSC requirements, the new BI reporting environment will deliver a substantial part of the information needed for the BSC, thus killing two birds with one stone. By aligning the BSC and BI initiatives, PowerCo will avoid the adverse strategic and economic implications of unaligned initiatives and will have a more robust performance management system.

## A POWERFUL COMBINATION

The combination of strategic alignment, performance measurement, and performance improvement that effectively aligned BSC and BI initiatives can deliver is quickly making its way into the DNA of major companies in a wide range of industries. The BSC is widely adopted and well-regarded by companies that use it. BI is also widely adopted, and top business executives are becoming more aware of it. If balanced scorecards and business intelligence are pursued separately, companies will face substantial technical risks and adverse strategic and economic implications. Skillful alignment can overcome these risks and cost effectively deliver a performance management system that provides both the means to know how the company is doing and the business information, analytical tools, and decision support needed to improve results. Given the availability of proven tools for alignment, and given modern IT tools, executives and managers can substantially improve company performance and meet the core performance management responsibilities Peter Drucker spoke of more than 30 years ago. ■

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