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"Assessing BI Readiness: The Key to BI ROI"

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Assessing BI Readiness: A Key to BI ROI

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Historically, many data warehousing and business intelligence (BI) initiatives have been IT-driven, and much of the focus within the industry has been on the technical aspects of delivering information to the BI user community. Having arrived at a point where many of the technical challenges and trade-offs are at least well understood, attention has shifted toward expanding the ways in which BI can be used to deliver business value and to enhancing BI development methods to ensure that BI investments pay off.

In particular, much of the discussion about BI and ROI has centered on the use of modern, business-centric development methods that design ROI into planned BI applications at the outset and then reengineer relevant business processes to ensure that the planned ROI is actually captured. As part of this more rigorous approach, BI Readiness Assessments are being used at the front end of BI projects to determine the degree to which a given organization is prepared to make the changes that are necessary to fully capture the business value of BI.

A well conceived BI Readiness Assessment builds on traditional DW Readiness Assessments by examining a range of organizational attributes that are correlated with the readiness to exploit BI for improved profits (private sector) or improved productivity and service (public sector). Examining these key readiness factors up front focuses the attention of the business sponsors on the exact business value capture mechanisms for a given BI investment – the manner in which relevant business processes must change in order to exploit the BI application or applications. BI Readiness Assessments also identify specific areas of implementation risk so they can be managed and mitigated, thus improving the probability of BI success. Used effectively, the information gained from a BI readiness assessment helps the development team design ROI into BI applications and reduce the business risk that BI applications will turn out to be shelfware.

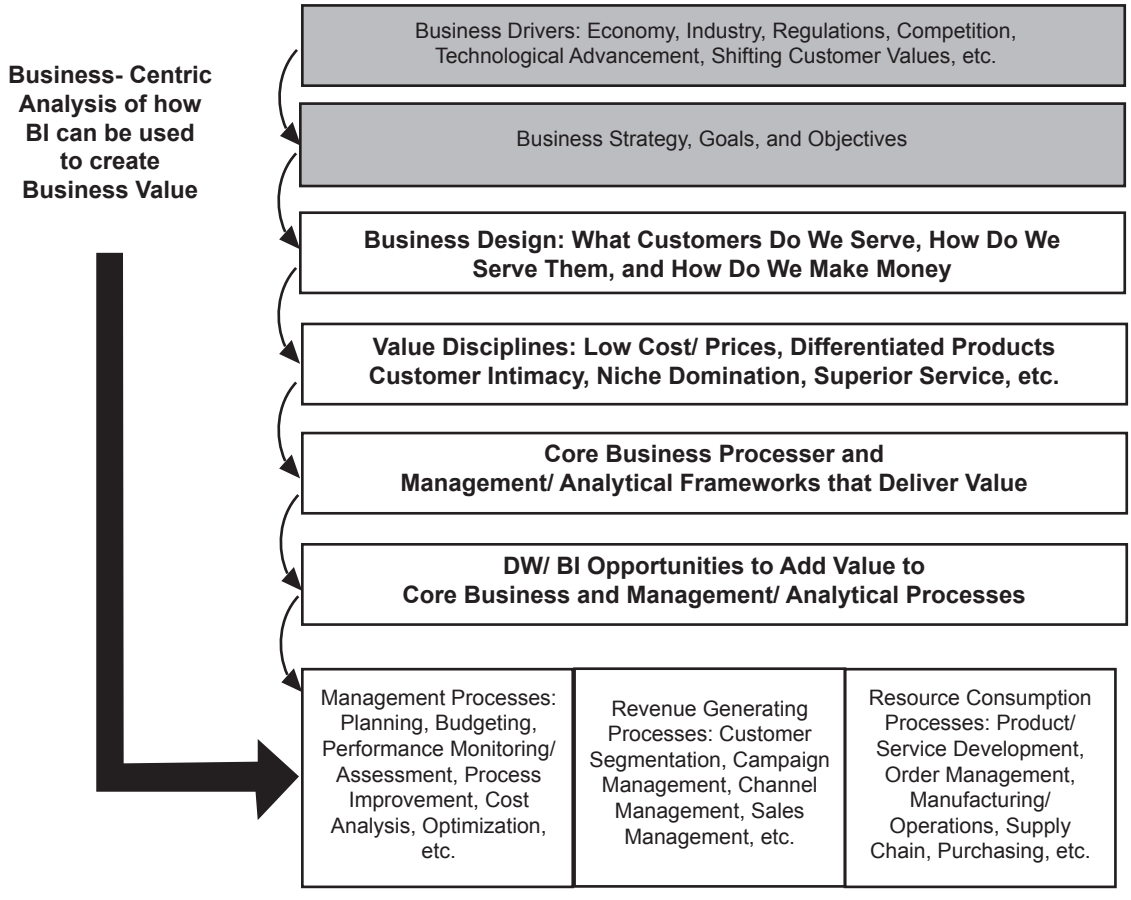
Introduction

The business value of business intelligence lies in its ability to improve the effectiveness of the core business processes that drive business performance. In the private sector, business performance ultimately means revenue generation and profit delivery. In the public sector, it means accomplishing a mission with an affordable balance between service level and productivity. In either venue, an investment in BI must return profits or cost savings that exceed the amount invested or business value will actually be lost. The increased attention being paid to the ROI of BI reflects industry experience over the past decade whereby many data warehousing initiatives – and the BI applications they supported – were not successful when measured against the business value yardstick.

To overcome this problem, we need to better understand where the business value of BI is created and then identify and manage the preconditions for capturing the business value (Williams and Williams, 2003).

Using business-centric BI development methods builds a richer and more rigorous understanding of the business value capture mechanisms for a given BI project or for all of the opportunities within the BI portfolio. Techniques such as business design models, business value driver mappings, core business process models, and BI opportunity maps are used to achieve strategic alignment between: (1) business strategies, goals, and objectives; (2) the key business processes employed to meet the goals and objectives; and (3) the BI initiatives that are designed to improve the effectiveness of the key business processes. These efforts

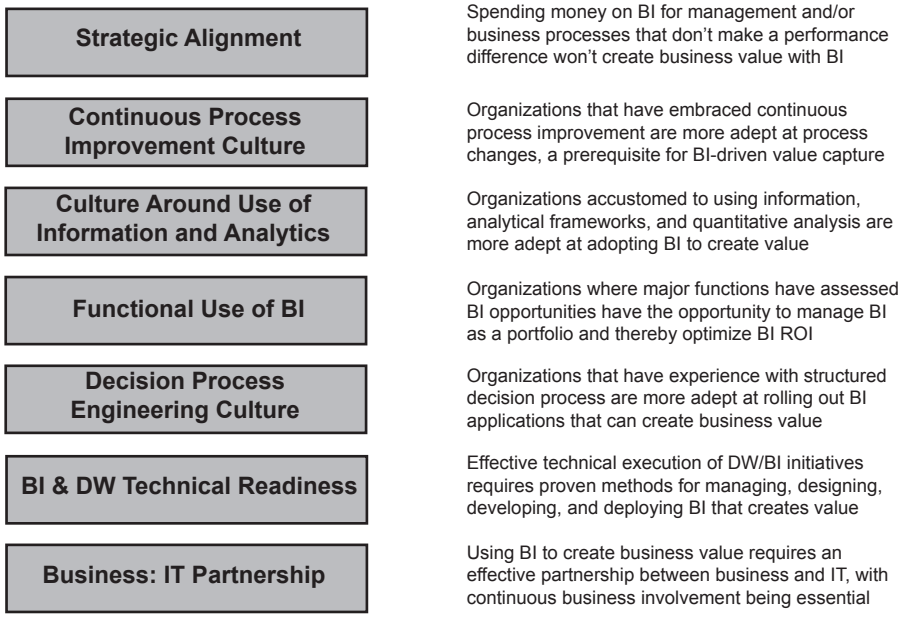
Figure 1. Business- Centric Analysis of how BI can be used to create Business Value



lay the groundwork for a successful BI investment by establishing a business-centric roadmap for high-impact BI investments. The basic business-centric analytical flow is depicted in Figure 1.

Business-centric BI development methods essentially change the front-end analysis for BI and DW by adding rigor to the determination of how the BI investment or investments are going to make money for the organization. These methods also change the back end delivery process by using business process reengineering techniques to ensure that the deployed BI applications are embedded in relevant business and/or management processes that deliver business value.

Figure 2. The Impact of BI Readiness Factors on BI ROI



To reach the final destination– i.e. deployed BI applications that deliver ROI - we also need to manage those business and IT factors that will either support or impede project success, and that is where the BI Readiness Assessment comes into play. Based on our consulting experience with Fortune 1000 companies and Government agencies, and on our experience as judges for the annual TDWI Best Practices competition, we have identified factors that are positively correlated with an organization's ability to leverage BI to improve business performance and deliver business value, as shown in Figure 2.

By determining where an organization stands in relation to these BI readiness factors, we can leverage its strengths, manage the risks, launch initiatives to improve readiness, develop competencies in embedding BI into core processes, and manage the process of capturing business value on specific BI projects. A BI Readiness Assessment can thus be seen as a BI strategy tool and as an implementation tool that, with a modest investment of effort, can greatly enhance the probability of a strong payoff for a BI investment.

BI Readiness, Business Risk, and Traditional Development Methods

A BI Readiness Assessment is a tool designed to help overcome the limitations of traditional development methods and architectures. Because it is business-centric, we are less concerned with the technical issues of DW and BI deployment, though technical architecture, data architecture, technology choices, and appropriate methods will always be critical to project success. Rather, we are interested in the *business risk* associated with BI investments, defined as the risk that the business will not successfully capitalize on a given deployed BI application, and thus the investment will not pay off. This is different from traditional development approaches, which make the leap of faith that the combina-

tion of sponsor support (funding), subject matter expert (SME) involvement, and sound technical and management methods will result in a successful BI project. We believe that industry experience shows a clear need to move beyond this traditional perspective if the business value of BI is to be fully realized in a greater number of organizations. Two relatively recent cases, disguised to protect the proprietary interests of the organizations involved, will illustrate this point.

Manufacturing Company Example

Company A is a $2.5 billion manufacturer of consumer and industrial products. At the time of the case (2000/2001), its consumer products group had a deployed data mart used for managing revenue and profit delivery to meet Wall Street's expectations. Company A's industrial products group determined that a similar BI application would allow them to do a better job of managing revenues and profits. Funding was obtained, and a traditional development method was employed to design, develop, and deploy the BI application. Facilitated sessions with SMEs were held to determine the business questions the mart would need to answer, several business users were involved throughout the project, and training was provided once the mart was completed. While the BI application was ultimately successful, there were several bumps in the road that could have been avoided via a comprehensive BI Readiness Assessment. Specifically:

• **Continuous process improvement** was not part of the culture of the sales organization, the intended user of the BI application. As a result, the change from static, canned reports delivered monthly to OLAP capabilities with daily refreshes to the mart was difficult for the user community to adjust to, *even though sales users had been represented throughout the design, development, and training design processes;*

• The **culture around use of information and analytical applications** was not supportive of adoption of the new BI application. The sales force was comprised mainly of older, technophobes who made their living be being knowledgeable about the products and good at nurturing relationships with buyers. As a workaround, assistants printed out hard copy reports from the mart and e-mailed them to the sales force;

• The **culture surrounding decision making** was strictly ad hoc and idiosyncratic, which did not allow for structured uses of the new BI application within key sales and sales management processes. Rather, each salesperson was free to use, or not use, the application as he or she saw fit; and

• The **Business/IT partnership was less than ideal**, which led to a 50% project surcharge from IT to the business after development was complete but prior to the BI application being put into production. This caused resentment and blaming, which has further hindered deployment of BI applications within the company.

Had a BI Readiness Assessment been conducted, it is likely that many of these bumps in the road could have been avoided, or at least managed better. The design of the BI application would certainly have been different, even though the information delivered would have been the same. Further, a richer understanding of the culture around information use, decision-making, and the use of analytical applications would have allowed Company A to engage in a more proactive business process reengineering effort, rather than assuming that application training was all that was required.

Government Agency Example

Government Agency B is a $8 billion organization that faces substantial business challenges over the next decade, due largely to projected demand increases, expected staff retirements, heightened service expectations on the part of the citizens served, and a tight Federal budget climate. Accordingly, the Agency is challenged, like many government organizations, to "do more with less" while maintaining or improving service delivery.

These challenges are formidable, and the agency has embarked on a BI program aimed at providing all levels of operations management with timelier, more relevant information and appropriate analytical tools so that managers can consistently improve productivity and service. The program is specifically managing the BI readiness factors described in Figure 2, and it has funded a specific major task to ensure that it captures the business value of its investments in BI. In terms of the BI readiness: The situation at Government Agency B is different than that at Company A because BI best practices have evolved to include business-centric development methods that explicitly consider and manage the business risk associated with BI investments.

• The Agency funded a comprehensive project to ensure **strategic alignment** between its strategies, goals, and objectives, its key service delivery processes, and the BI applications required for making those processes more productive while improving service;

• The Agency has a record of **continuous process improvement** and a culture that supports the goal of operational excellence. The company embraces the use of IT to improve operational processes, it has come to realize the business value of business intelligence, and it has budgeted funds for business process reengineering to capitalize on its BI investments;

• The Agency recognizes that it will have to **change the culture** within its operating units to **embrace the use of enhanced information, modern analytical tools, and advanced optimization model**s. The good news is that managers across the agency have a strong desire to use BI to serve citizens better and operate more productively;

• The Agency is in the process of formally **assessing its BI and DW technical readiness** so that it can takes the necessary steps to enhance its overall capabilities to acquire, cleanse, integrate, store, and deliver high quality information to feed the full spectrum of BI applications that will be required to run the agency productively and with high levels of service to citizens; and

• The Agency employs effective IT governance mechanisms that promote an effective **business/IT** partnership, including executive level and working level steering committees, regular off site planning meetings, and web-based program communication mechanisms. The business units are actively engaged in all aspects of the program and are prepared to manage the changes required to capitalize on the BI investments.

The situation at Government Agency B is different than that at Company A because BI best practices have evolved to include business-centric development methods that explicitly consider and manage the business risk associated with BI investments. By assessing BI readiness at the front end. Government Agency B has positioned itself to: (a) design ROI into its BI applications from the outset; and (b) manage process changes and implementation risks so as to ensure that the BI application deliver business value. In other words, they've increased the odds that their BI applications will pay off. Business-centric development methods, including BI readiness assessments, go beyond traditional development methods by explicitly assessing the potential business value and probability of success for BI investments, rather than assume that business sponsors and SMEs have really thought about business process changes and business risk.

BI Readiness Factors

To ensure a return on an investment in BI, we have to identify and manage those factors that make a difference in whether the investments pay off. From a technical perspective, there is an established body of knowledge around data warehousing that we can employ to ensure that fundamentals of acquiring , staging, and delivering information and BI applications are

done correctly. From a business perspective, there are a number of factors that ultimately determine whether a BI application delivers a positive ROI. We can think of these readiness factors as types if business risk, and we can manage them accordingly.

Strategic Alignment

Much has been written about strategic alignment between business and IT. The discussion is generally about consistency between business strategy, business organization and processes, IT strategy, IT infrastructure, and IT organization and processes (Watson, Wixtom, and Goodhue, 2000). In the BI context alignment occurs when:

1. Business strategies and business processes are consistent and reinforcing, whether this is achieved by strategy mapping or traditional strategic planning mechanisms;

2. BI initiatives are focused on improving the key management and business processes that drive profits (private sector) or determine productivity and service (public sector); and

3. BI initiatives are supported by appropriate IT strategies, infrastructure (including appropriate data stores), and IT organization.

If any of these elements are absent, there us a risk that a BI initiative will not deliver business value. From an ROI perspective, we are **primarily concerned that BI initiatives are focused on business processes that make a difference.** We cannot expect much of an ROI on BI initiatives aimed at tangential parts of the business. To have a profit impact, BI investments must be directed at management processes and/or business processes that have the greatest impact on profits (private sector) or productivity and service (public sector). According, building ROI into BI initiatives require that we ensure–up front–a proposed BI portfolio or project is strategically aligned.

Continuous Process Improvement Culture

Using BI to improve management processes and/or business processes that make a difference in profits or productivity and service requires some degree of process change. Experience at Ford, Hewlett-Packard, Lands' End, and other leading organizations suggest that change management is often the most difficult aspect of successfully deploying a new BI application.

If that is the case, and if business users don't change the business processes to leverage BI, then the investment in BI will have no impact on the economic well-being of the organization. On the other hand, organizations that have created successful processes and this prepares them to effectively leverage BI within processes that have an economic impact. Accordingly, we want to assess whether an organization is ready to manage the process changes that will be required to capture the business value of a BI initiative. If they are not, we want to know that up front so we can formulate and execute appropriate plans for overcoming that liability (managing that risk).

The differences in corporate cultures with respect to change and continuous improvement are evident in conversations we've had with several of the large organizations with which we work. In one case where we were developing a BI strategy for an industrial manufacturer, we asked about the company's orientation to change. Their response was, "That's all we do is change." On the other hand, another company with which we've worked is very slow to change. The saying there is : "There are 1,000 people who can say *no* to a proposed change and only two who can say *yes*, and nobody knows who those two people are." This is a major company whose consumer product brands are among the

most well-known in the world. They are very successful, but they are very deliberate about change. From the perspective of capturing the business value of BI, These two companies present very different management and implementation challenges, and an effective BI readiness assessment can help ferret out the specific change-management and continuous-improvement challenges that we need to manage.

Culture Surrounding the Use of Information and Analytical Applications

Organizations embracing the use of information and analytical applications to improve profits (private sector) or productivity and service (public sector) are better able to leverage investments in BI than organizations that do not embrace and reward such approaches to creating business value. We recently conducted a "mini-survey" of BI readiness via our Web site. We found that major organizations differ markedly on this aspect of readiness. On a scale of 1 (low readiness) to 5 (high readiness), the survey respondents scored as high as 4.5 and as low as 2.5. While the number of respondents in the mini-survey was small, the fact that those who responded are major organizations (most have revenues greater than $1 billion) makes the survey responses valuable at least as anecdotal evidence.

The fact that organizations vary in their readiness to use information and analytical applications to improve business performance is an element of corporate culture and it is influenced by the environment in which the organization operates. For example, businesses that operate in high fixed-cost businesses–have long employed highly sophisticated revenue-optimization models that they use every day. These models dynamically manage pricing to ensure that the tradeoff between price and capacity utilization is optimized to deliver the most profits possible under given economic supply-and-demand conditions.

Such organizations are not daunted by the prospect of deploying new BI applications because their operating environment demands the use of BI applications and their culture supports those uses. In contrast, we have worked with leading companies where the predominant mode of operation was characterized by lack of information and analytics, decisions driven by force of personality, and the dominance of intuition at the expense of fact-based analysis. These different types of firms have different prospects when it comes to leveraging BI to capture business value. An effective BI readiness assessment will identify the relevant cultural obstacles to a successful BI application that delivers ROI.

BI Portfolio Management

A wide range of BI applications can improve the performance of the functional units within a given company, including applications that help drive revenue growth and those that help optimize costs and profits. Companies that have undertaken a comprehensive review of the major BI opportunities for sales, marketing, manufacturing, distribution, customer service, quality, and so forth are in the position to manage BI as a portfolio of investments, ranked by business impact and risk. This is important in an environment where capital budgets for IT are constrained, as they almost always are.

The idea of managing BI initiatives as a portfolios gaining increased attention in the context of discussions about the business value of BI.. In many companies, a certain percentage of sales is budgeted for IT, and then IT investments are managed as a portfolio (Broadbent and Weill, 1998). Within the IT capital budgeting context, BI's fit is shown in Figure 3.

Given its position in the IT portfolio, BI must compete for scarce capital funds, and the subject of ROI is almost always addressed by the formal capital budgeting process. If a given company has not examined the full spectrum of BI opportunities from a functional perspective, it cannot know if the BI projects it is proposing

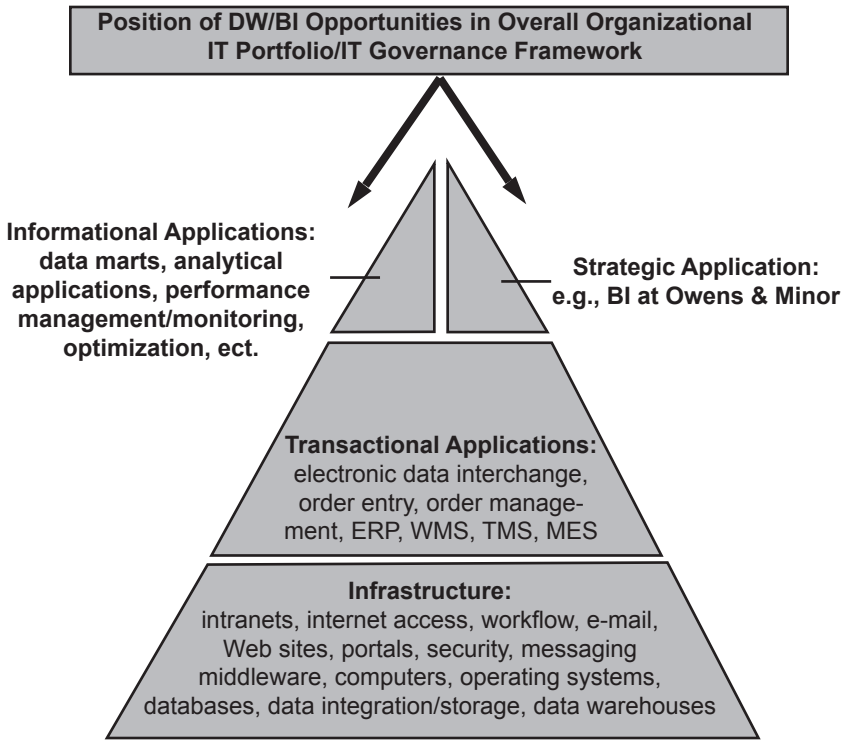


Figure 3. BI in the IT Portfolio

are those that offer the highest risk-adjusted ROI to the company. This may not make a difference if there is sufficient capital to fund all BI projects that offer a positive ROI. In a capital-constrained environment, however, not managing BI initiatives as a portfolio poses the risk of funding one BI project at the expense of another that may offer a higher ROI. In our view, companies that take a portfolio view of BI initiatives evidence a more strategic commitment to BI, and thus they are more ready to capture the maximum business value from BI investments. In our recent readiness survey, respondent scores ranged from 2.7 to 4.3 on this readiness factor, indicating that some organizations take a more strategic approach to managing BI for ROI.

Decision Process Engineering Culture

Decision process engineering is a term we have coined to convey the concept of using structured decision processes to increase the effectiveness of certain decisions that organizations face on a recurring or semi-recurring basis. These structured decision processes can incorporate the use of information, analytical applications, and/or quantitative methods as appropriate for the type of decision to be made. The decisions in which we are most interested are those that occur within the context of the core business processes that impact profits (private sector) or productivity and service (public sector).

For many companies in many industries, there are a number of routine and/or recurring management and operational decisions that get made in the context of management and business processes. Such decision processes can be improved by using BI in ways that capitalize on the availability of information, analytical applications, and workflow technology to build structured, repeatable decisions processes where appropriate (Williams and Williams, 2004). Companies that understand this are well positioned to capitalize on BI applications to improve profits. In our recent "mini-survey" of BI readiness, we found that survey respondent' scores ranged from 1.5 to 4.0 on this dimension.

Those that scored high on this readiness factor agreed with such statements as "There is a standard decision-making routine for any well-structured problem situation we face." Having experience engineering key decision processes means that an organization is accustomed to answering the kinds of questions associated with the example of BI application–a simple variance analysis example–shown in Figure 4. Such experience translates into BI readiness because it prepares

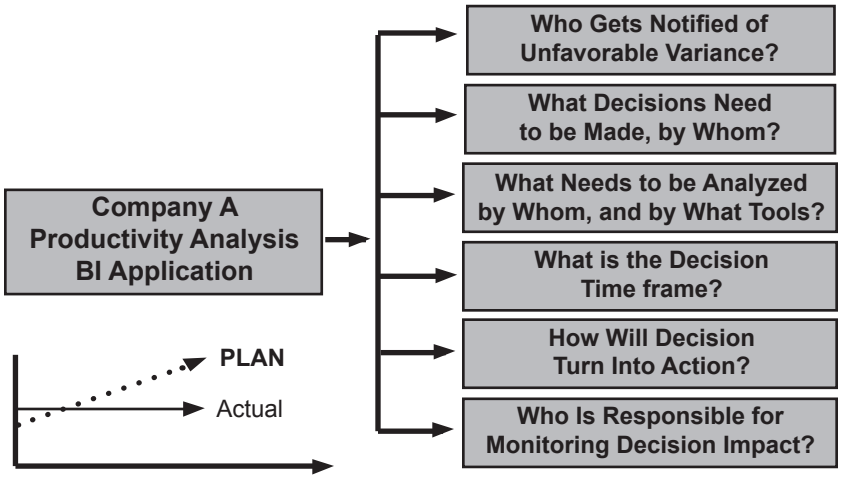


Figure 4. Example BI Application for Performance Variance Analysis: Key Questions for Decision Process Engineering

organizations to embed the use of BI applications into the core business processes that determine overall performance.

BI and DW Technical Readiness

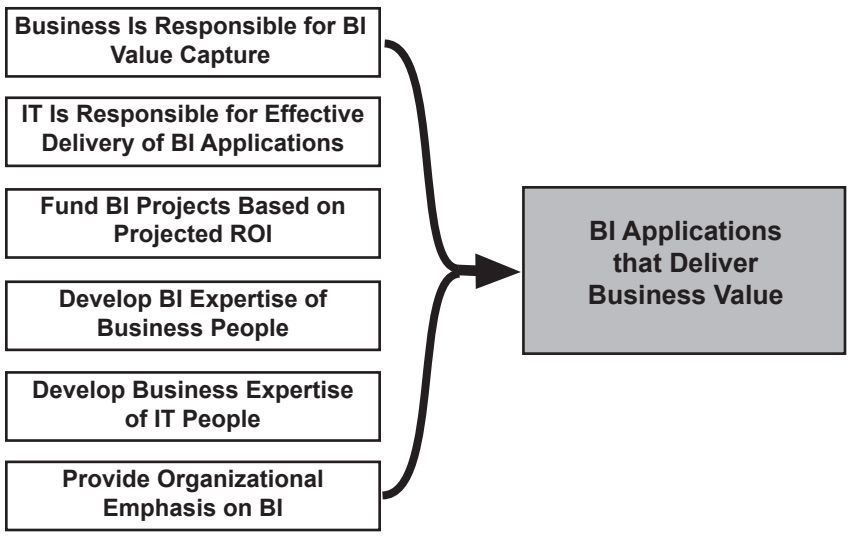
A critical requirement for capturing the business value of BI is the technical ability to deliver the information and analytical applications that comprise BI. Fortunately, there is an extensive body of knowledge about how to do this. That said, some organizations are much more capable than others of designing, developing, deploying, operating, and maintaining the appropriate technical environment to support data warehousing and business intelligence. Since we are interested in increasing the likelihood that BI investments will pay off, we have to be concerned about reducing technical risk, which means that we need to assess technical readiness.

By identifying technical risks up front, we can devise and execute appropriate plans to mitigate them. Accordingly, an effective BI readiness assessment should assess BI and DW technical readiness.

Effective Business/ IT Partnership for BI

When we talk about an effective partnership between business and IT, we're not just talking about "playing well" with each other. The issue is a business result that creates business value, and thus we must be concerned with the business practices used to manage development and use of IT generally (and BI specifically). Organizations that have effectively used IT to improve business results will be more capable of leveraging BI to create value than those whose practices do not create effective partnerships are shown in Figure 5.

Figure 5. Elements of Effective Business/IT Partnerships for BI



The concepts encompassed within Figure 5 are not new– they are the proven principles of effective use of IT to deliver business value (Dvorak, Holen, Mark, and Meehan, 1997). By applying these ideas to management of a BI portfolio, we can greatly increase the probability that individual BI initiatives will deliver business value. Accordingly, an effective BI readiness assessment will test for the presence of practices that implement these principles.

Summary

The seven BI readiness factors we have described can be thought of as potential barriers to the ability to deploy BI applications that create business value. Accordingly, we must know where the organization stands in relation to these factors, and we must take a holistic and realistic view of its starting position. No organization will achieve perfect scores across the board, and BI readiness is more easily improved in some areas than others.

For example, changing the culture surrounding the use of information and analytical applications will take longer than improving technical readiness, which in some instances can be addressed by strategic hiring and/or the use of consultants. The principle objective, therefore, is to use the BI readiness assessment to provide information that can be used to **develop specific, customized BI strategies and mentation plans that effectively account for an organization's starting position so BI initiatives deliver as much value as possible as quickly as possible.**

Performing an effective BI readiness assessment is a critical element of business-centric BI development methods because it helps "design" ROI into BI initiatives from the outset. A BI readiness assessment to BI success and then systematically managing BI initiatives to overcome those impediments. Done correctly, it need not be an expensive or lengthy process, and the insight gained into the principal business risks associated with BI initiatives will pay dividends in the form of deployed BI applications that deliver real business value.

About the Authors

Steve Williams is the President of DecisionPath Consulting. With close to 25 years of experience, he is a recognized expert in business and IT strategy aimed at optimizing financial and operational performance in both Federal government agencies and Fortune 1000 corporations. He is a frequent speaker at TDWI, APICS, and NAPM events and is also a guest lecturer on supply chain collaboration and supply chain IT at the Darden School, University of Virginia. Steve holds an MBA from the Darden School at the University of Virginia and a BS in Business Administration from the University of Maryland.

Nancy Williams serves as Vice President of DecisionPath's Business Intelligence and Data Warehousing Consulting practice. She has more than 17 years of consulting and management experience, and is a highly sought after authority on data warehousing and business intelligence issues. Nancy is a regular instructor at TDWI World and Regional Conferences and has taught the TDWI Fundamentals and Data Modeling courses for a number of Fortune 500 companies and Government agencies. She holds an MBA from the Darden School at the University of Virginia and a BS in Education from the University of Virginia.

About DecisionPath Consulting

DecisionPath Consulting provides strategy, business process, technology and program management services in the specialized field of Business Intelligence (BI). When properly implemented, BI processes provide the accurate, highly relevant and timely information that's required to optimize financial and operational performance in any organization. DecisionPath Consulting is an independent, objective source of business and technology expertise required to ensure that your BI initiative is successfully deployed in a timely, cost-effective manner.

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