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T R E N D S

"Capturing ROI through Business-Centric BI Development Initiatives"

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More and more attention has been paid recently to the business value of business intelligence (BI). Experience suggests that this is because not all data warehousing and BI projects have been successful from a business perspective. For every TDWI (The Data Warehousing Institute) Best Practices winner, there are dozens of companies whose investments in data warehousing (DW) and BI have not paid off. This experience suggests that we need to evolve our basic methods in order to better capture the business value of BI.

Whereas data warehousing has historically focused on the technical challenges, technical methods, and project management methods required to successfully deploy data warehouses and data marts, a key recent innovation is in the methods we use to fully leverage the potential of BI. These innovations extend the technical methods of Inmon, Kimball, Imhoff, and others by *designing return on investment (ROI) into BI initiatives from the outset and systematically driving the use of BI into the core business processes and decisions that determine business results.*

Business-centric methods go beyond traditional approaches by putting rigor into defining the *business value capture mechanism* for each BI project. This includes determining and specifying – a priori - how business processes and key decision processes must change in order to leverage BI investments, which are managed as a portfolio. This also includes using process reengineering and process improvement techniques to ensure that BI projects actually deliver the intended ROI.

When using business-centric methods, the BI team no longer throws the BI application "over the wall" after users have been trained, hoping that the business organization will understand what changes are needed and how to make them. Rather, BI team responsibilities are extended to include helping the business organization execute the changes to the business processes and decision processes that drive business results. *Business-centric methods recognize that the missing link in many data warehousing efforts is the lack of clarity in the value proposition and/or the lack of business process change to capture the business value of BI.*

All of the traditional data warehouse and data mart architectures and design methods encompass structures, components, activities, and deliverables that seek to put the right information into the hands of the right people at the right time. Some have been judged to be stronger than others, but they all are cognizant of the need for BI to have a business impact.[1] In a telling analysis, however, Jill Dyché recently talked about requirements being difficult to capture and consolidate due to the need for data warehouses to support a broad range of business needs. Her conclusion is that "everybody talks about requirements definition being a best practice, but that's where they leave it."[2] This is a theme that we hear repeatedly as frequent instructors for TDWI and as consultants, and it is our observation that this state of affairs is due to:

• The fact that many data warehousing project teams are light on business expertise, relying heavily on the limited access they can get to "subject matter experts" as the source of DW and BI requirements; and

• The fact that traditional DW and BI methodologies are focused on the "intelligence" part of BI and not on the "business" part of BI, which tends to reflect the IT backgrounds of the creators of those methods.

In her analysis, Dyché went on to suggest that BI applications need to be aligned with business strategy and business processes in order to deliver business value.[3] We concur with this perspective, as reflected in our November 2003 article "The Business Value of Business Intelligence".[4]

The principal limitations of the traditional DW and BI methodologies, from the point of view of ROI delivery, is that they do not take a BI portfolio perspective, they do not systematically analyze how BI can be inserted into the core business and decision processes via which business value is created, they do not systematically address the business process change required to capture the business value of BI, and they typically do not challenge the business perspectives of the subject matter experts (SMEs) from whom requirements are elicited. This is not to say that traditional approaches

are deficient for designing, building, and deploying data warehouses. Rather, we simply mean that such approaches do not design ROI into the process, and this sometimes results in DW and BI investments that do not pay off.

At this point, proponents of traditional methods might say something like "wait a minute – we talk to the SMEs about all those things, including strategic alignment, business processes, and change." We grant that point, and we're simply saying that the conversation with the SMEs is generally aimed at understanding business subject areas as a precursor to data modeling, as opposed to systematically:

• Mapping from business strategies to core business processes;

• Capturing and modeling the core business and decision processes that create value for the organization;

• Identifying process metrics for the core business and decision processes and determining the potential business value of inserting BI into those processes;

• Identifying, evaluating, and ranking a portfolio of BI opportunities based on their business impact and execution risk;

• Assessing organizational readiness to exploit BI to improve profits (private sector) or productivity and service (public sector); and

• Identifying the process changes required to leverage BI within the core business and decision processes and managing those changes, including measuring process performance improvement.

Additionally, and this may sound heretical, there is often a fundamental assumption in IT that the SMEs understand BI and its potential and have given sufficient thought to the subject to be able to articulate a cogent and comprehensive vision of how BI can be applied in their subject

area. It is as if the IT requirements analyst is supposed to be a scribe and simply record what the SMEs say and document the "requirements."

Sometimes this works, particularly with visionary or enlightened SMEs. In many cases, however, the SMEs don't understand BI and/or they don't have time to really think through the BI opportunities and requirements. In other cases the SMEs aren't really SMEs. They may know more than most people in their organization about a key function or a core business process, but that does not guarantee that they have the ability to envision how the process could be reengineered to use BI to improve process performance. We've seen this time and again within major organizations in a variety of industries.

Just as history has taught us the shortcomings of legacy DW and BI methods, it also provides success stories that suggest how we might extend and enrich these legacy methods to enable businesses to do a better job of leveraging BI to capture business value. For example:
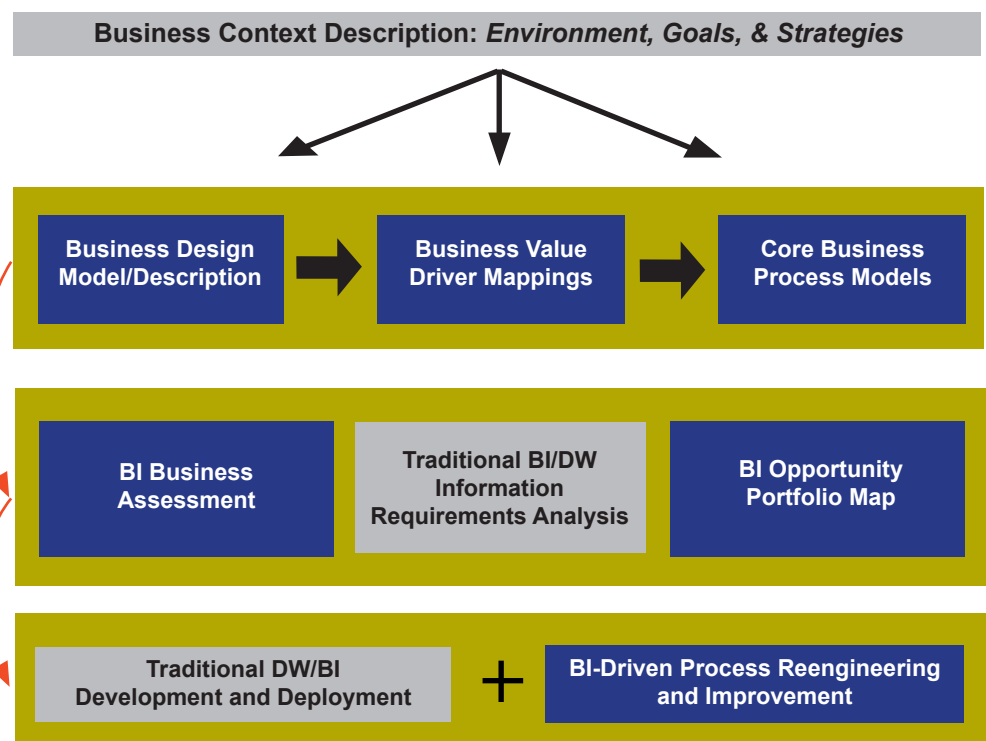
• Ford Parts Supply and Logistics used BI to improve the business processes by which it supplies OEM service parts to 5,900 dealers in North America, achieving a 20% reduction in back orders, a 30% reduction in end-to-end cycle time, and a 20% reduction in safety stock inventory. The *major challenge to those achievements was securing buy-in from the business operations for the business changes necessary to exploit the BI applications, which took more than a year.*

• Hewlett Packard Mobile Computing used BI to improve its processes

for meeting warranty commitments, managing warranty costs, and improving product quality and customer satisfaction. To achieve this, HP was careful not to subscribe to the philosophy of "build it and they will come." Instead, it *redefined roles, responsibilities, and processes to address business improvement opportunities that BI enabled.*

• Lands' End used BI to improve revenue capture by avoiding the lost sales and lost customers that can occur when a catalog item is out of stock. The specific BI application integrated data from multiple source systems into an inventory management application that provides inventory analysts with all the information necessary to respond appropriately to changing inventory needs in real time. Among the critical success factors was a *design that was based on intimate knowledge of the inventory management process and the associated needs of the analysts charged with executing that business process.*

Figure 1. Key Elements of Business-Centric BI Development

Business Context Description: *Environment, Goals, & Strategies*

Business Design Model/Description → Business Value Driver Mappings → Core Business Process Models

BI Business Assessment | Traditional BI/DW Information Requirements Analysis | BI Opportunity Portfolio Map

Traditional DW/BI Development and Deployment + BI-Driven Process Reengineering and Improvement

In all of these success stories there are the common elements of business process change and close alignment between a core business process and the use of BI to improve process performance. The challenge going forward is to structure these concepts into repeatable, business-centric methods so that more companies may succeed with their BI initiatives. The key elements of a business-centric method are shown in Figure 1.

Figure 1 shows that Business-Centric BI Development extends traditional methods (gray boxes) by adding new analyses, methods, activities, and deliverables (blue boxes). Starting at the top of Figure 1, we see that Business-Centric BI Development, like traditional development, starts by developing a solid understanding of the business context in which an organization operates. Here we are interested in environmental drivers such as new regulations, macroeconomic conditions, technological innovation, and changes in the factors of production, competitive trends and so forth. We are also interested in the organization's goals or objectives and its strategies for achieving them.

Our understanding of the business context sets the stage for subsequent analyses and activities, and it is at this juncture where traditional development and Business-Centric BI Development start to differ. In traditional development, the focus is on traditional information requirements gathering sessions, which establish the requirements for data modeling, data warehouse and data mart design, and ultimately development and deployment, as depicted by the gray boxes in Figure 1. Business-Centric BI Development encompasses a broader set of activities aimed at ensuring that BI investments deliver measurable and meaningful business value. As a general proposition, using BI to deliver business value means driving the use of information, analytical applications, and/or structured decision-making into management processes and/or business processes that directly impact profit (private sector) or productivity and service (public sector).[5] The activities and deliverables encompassed by Business-Centric BI Development are designed to:

• Make the linkages between strategy, key business processes, and BI opportunities explicit.

• Characterize the specific means by which profit, productivity, and or service will be improved by any given BI opportunity.

• Evaluate all BI opportunities as part of a BI Portfolio.

• Manage the business process changes required to capture the business value of each BI investment.

• Work seamlessly with the appropriate traditional technical development method to deliver information, analytical applications, and structured decision processes.

Business Design Model/Description, Business Value Driver Mappings, and Core Business Process Models

Figure 1 shows a flow between the business design model/description, the business value driver mappings, and the core business process models. This flow is similar to strategy mapping in that makes explicit the linkages between strategy, business design, and the key business processes that enable strategy execution. In essence, Business-Centric BI Development seeks to identify the core business processes that are used to compete, to acquire and keep customers, to deliver value to customers, and to perform supporting activities so that an organization can define a comprehensive portfolio of BI opportunities that will positively impact performance of those core processes. If those core processes are well aligned strategically, then improving their performance will improve overall performance – including profitability, productivity, and service.

BI Opportunity Portfolio Map

The BI Opportunity Portfolio Map is developed by having BI-savvy business analysts and business SMEs work together to identify specific opportunities to improve the per-

formance of core business processes by using BI – including information, analytical applications, and structured decision processes. Each opportunity is ranked according to its potential business impact and its implementation risk, as shown in Figure 2.
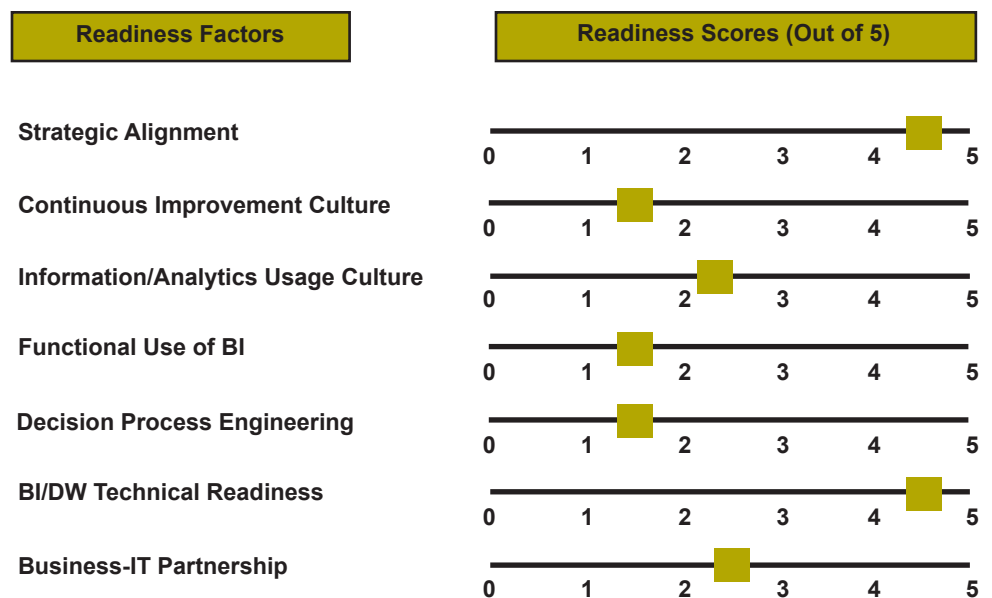
BI Readiness Assessment

The BI Readiness Assessment is used to assess an organization's BI Maturity and the degree to which it is prepared to leverage BI to improve profits and/or productivity and service. In other words, to what degree are the critical organizational factors that are positively correlated with BI success in place? The specific factors that need to be assessed include strategic alignment, continuous improvement culture, information exploitation culture, functional use of BI, decision process engineering experience/culture, BI/DW technical readiness, and Business-IT partnership effectiveness. A sample BI Readiness Assessment can be found at www.decisionpath.com, and a sample BI Readiness Summary is provided as Figure 3.

The example in Figure 3 was chosen to be representative of typical results for an organization using traditional methods. We

Figure 2. BI Opportunity Portfolio Map

BI Opportunities to Add Value to Core Business Processes and Management/Analytical Processes

Management Processes: Planning, Budgeting, Performance Monitoring/Assessment, Process Improvement, Cost Analysis, Optimization, etc.

Revenue Generating Processes: Customer Segmentation, Campaign Management, Channel Management, Sales Management, etc.

Operating Processes: Product/Service Development, Order Management, Manufacturing/Operations, Supply Chain, Purchasing, etc.

Low Implementation Risk High

High

Buisness Impact

Low

Opportunity A	Opportunity C
Opportunity B	
Must Haves	**High Risk/Reward**
Easy Wins	**Why Do It?**
Opportunity D	Opportunity E

Figure 3. Abbreviated Sample BI Readiness Scoring Summary

Readiness Factors

Readiness Scores (Out of 5)

Strategic Alignment
0 1 2 3 4 5

Continuous Improvement Culture
0 1 2 3 4 5

Information/Analytics Usage Culture
0 1 2 3 4 5

Functional Use of BI
0 1 2 3 4 5

Decision Process Engineering
0 1 2 3 4 5

BI/DW Technical Readiness
0 1 2 3 4 5

Business-IT Partnership
0 1 2 3 4 5

see that the organization has achieved strong strategic alignment and BI/DW technical readiness and that it has improvement opportunities in the other five readiness factors that are correlated with leveraging BI as a strategic corporate asset.

BI-Driven Process Reengineering and Improvement

These activities are where the rubber meets the road. As noted earlier, business value can only be created and captured with BI by incorporating the use of BI within management processes and business processes that directly impact profits (private sector) or productivity and service (public sector). This is another critical way in which Business-Centric BI Development moves beyond traditional development methods. By reengineering the use of information, analytical applications, and structured decision processes, BI deployments move beyond the "build it and they will come" philosophy that has been proven to be less than optimal for delivering ROI on BI investments. As we saw with Ford, Hewlett Packard, and Land's End, changing business processes to leverage BI is often the toughest hurdle to clear when using BI to create business value.

Business-Centric BI Development Methods dramatically extend traditional methods in order to comprehensively address the critical success factors that underpin BI ROI. The overall approach is intently and comprehensively focused on business value as the primary criteria for defining and prioritizing BI initiatives. This focus has important implications for BI Portfolio management and for BI project execution.

At the planning level, Business-Centric Development Methods embrace taking a comprehensive view of an organization's BI opportunities and then managing the BI investment portfolio to optimize risk-adjusted business value. Using this approach does not require an expensive, lengthy project. Rather, its use relies on

having skilled business analysts on the BI team and on effective working relationships with SMEs, including the ability to understand their language and work with them to define opportunities to leverage BI within core value-creating business processes.

At the execution level, skilled business analysts are also required to work with the business community to reengineer these core value-creating business processes in order to capture ROI. In today's tight IT investment climate it is no longer enough to promise soft benefits from BI, such as flexibility, agility, and so forth. Hard-nosed CIOs and business sponsors want to know how BI will deliver hard ROI. Business-Centric BI Development Methods provide good answers to those hard-ROI questions, they design in ROI from the outset, and they capture ROI via proven reengineering approaches.

References

1. See "TDWI Business Intelligence Fundamentals, Part II: BI Architectures and DW Methods." 2004.

2. Dyché, Jill. "What Business Managers Need to Know about Business Intelligence." TDWI World Conference, November 2003.

3. Ibid.

4. Williams, Steve and Williams, Nancy. "The Business Value of Business Intelligence." Business Intelligence Journal, Fall 2003.

5. Ibid.

About the Authors

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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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