Business Intelligence

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From the Editor

In good economies and bad, the secret to success is to meet your customers' or clients' needs. Your enterprise has to respond to changing conditions and emerging trends, and it has to do so quickly. Your organization must be, in a word, agile.

"Agile" has been used to describe an application development methodology designed to help IT get more done in less time. We're expanding the meaning of agile to include the techniques and best practices that will help an organization as a whole be more responsive to the marketplace, especially as it relates to its business intelligence efforts.

In our cover story, William Sunna and Pankaj Agrawal note that rapid results in active data warehousing become vital if organizations are to manage and make optimal use of their data. Their compressed flat-file architecture helps an enterprise develop less costly solutions and do so faster—which is at the very heart of agile BI.

Sule Balkan and Michael Goul explain how in-database analytics advance predictive modeling processes. Such technology can significantly reduce cycle times for rebuilding and redeploying updated models. It will benefit analysts who are under pressure to develop new models in less time and help enterprises fine-tune their business rules and react in record time—that is, boost agility.

Barry Devlin notes that businesses need more from IT than just BI. Transaction processing and social networking must be considered. Devlin points out how agility is a major driver of operational environment evolution, and how the need for agility in the face of change is driving the need for a new architecture. Alexander Chiang looks at dashboard platforms (the technologies, business challenges, and solutions) and how rapid deployment of agile dashboard development reduces costs and puts dashboards into the hands of users quickly.

Also in this issue, senior editor Hugh J. Watson looks at enterprises that have immersed BI in the business environment, where work processes and BI intermingle and are highly interdependent. Mukund Deshpande and Avik Sarkar explain how sentiment data (opinions, emotions, and evaluations) can be mined and assessed as part of your overall business intelligence. In our Experts' Perspective column, Jonathan G. Geiger, Arkady Maydanchik, and Philip Russom suggest best practices for correcting data quality issues.

We're always interested in your comments about our publication and specific articles you've enjoyed. Please send your comments to jpowell@1105media.com. I promise to be agile in my reply.

James E. Powell

BI-based Organizations

Hugh J. Watson

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A growing number of companies are becoming BI-based. For these firms, business intelligence is not just nice to have; rather, it is a necessity for competing in the marketplace. These firms literally cannot survive without BI (Wixom and Watson, 2010).

In BI-based organizations, BI is immersed in the business environment.[1] Work processes and BI intermingle, are highly interdependent, and influence one another. Business intelligence changes the way people work as individuals, in groups, and in the enterprise. People perform their work following business processes that have BI embedded in them. Business intelligence extends beyond organizational boundaries and is used to connect and inform suppliers and customers.

An Example of a BI-based Organization

I recently completed a case study of a major online retailer. (The well-known company asked that its name not be used in this article.) Business intelligence permeates its operations. The company has a data warehouse group that maintains the decision-support data repository and a decision-support team with analysts scattered throughout the business to help develop and implement BI applications. The applications include:

- Forecasting product demand

- Determining the selling price for products, both initially and later for products with sales below expectations

- Market basket analysis

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1. The concept of a BI-based organization is similar to the "immersion view" of IT introduced in O.A. El Sawy, 2003.

Beyond Business Intelligence

Barry Devlin

Barry Devlin, Ph.D., is a founder of the data warehousing industry and among the foremost worldwide authorities on business intelligence and the emerging field of business insight. He is a widely respected consultant, lecturer, and author of the seminal book, *Data Warehouse: From Architecture to Implementation*. He is founder and principal of 9sight Consulting (www.9sight.com). barry@9sight.com

Abstract

It has been almost 25 years since the original data warehouse was conceived. Although the term business intelligence (BI) has since been introduced, little has changed from the original architecture. Meanwhile, business needs have expanded dramatically and technology has advanced far beyond what was ever envisioned in the 1980s. These business and technology changes are driving a broader and more inclusive view of what the business needs from IT; not just in BI but across the entire spectrum—from transaction processing to social networking. If BI is to be at the center of this revolution, we practitioners must raise our heads above the battlements and propose a new, inclusive architecture for the future.

Business integrated insight (BI²) is that architecture. This article focuses on the information component of BI²—the business information resource. I introduce a data topography and a new modeling approach that can support data warehouse implementers to look beyond the traditional hard information content of BI and consider new ways of addressing such diverse areas as operational BI and (so-called) unstructured content. This is an opportunity to take the next step beyond BI to provide complete business insight.

The Evolution of an Architecture

The first article describing a data warehouse architecture was published in 1988 in the *IBM Systems Journal* (Devlin and Murphy, 1988), based on work in IBM Europe over the previous three years. At almost 25 years old, data warehousing might thus be considered venerable. It has also been successful; almost all of that original architecture is clearly visible in today's approaches.

The structure and main components of that first warehouse architecture are shown in Figure 1, inverted to match later bottom-to-top flows but otherwise unmodified. Despite changes in nomenclature, all but one of the major components of the modern data

BI StatShots

Unified Data Management

Barriers. According to our research survey, unified data management is most often stymied by turf issues. These include a corporate culture based on silos, data ownership, and other politics. UDM also suffers when there's a lack of governance or stewardship, a lack of business sponsorship, or unclear business goals for data.

Strategic Value. To test perceptions of UDM's strategic status, this report's survey asked respondents to rate UDM's possible strategic value.

A whopping 59 percent reported that it could be highly strategic, whereas an additional 22 percent felt it could be very highly strategic. Few survey respondents said that UDM is not very strategic (5 percent) and no one felt it's not strategic at all (0 percent).

In the perceptions of survey respondents, UDM has a strong potential for high strategic impact. By extension, UDM is indeed strategic (despite its supporting role) when it is fully aligned with and satisfying the data requirements of strategic business initiatives and strategic business goals.

—*Philip Russom*

In your organization, what are the top potential barriers to coordinating multiple data management practices? (Select six or fewer.)

Barrier	Percent
Corporate culture based on silos	61%
Data ownership and other politics	60%
Lack of governance or stewardship	44%
Lack of business sponsorship	42%
Poor master data or metadata	32%
Inadequate budget for data management	31%
Data management over multiple organizations	28%
Inadequate data management infrastructure	28%
Unclear business goals for data	28%
Poor quality of data	24%
Independence of data management teams	23%
Consolidation/reorganization of data management teams	20%
Existing tools not conducive to UDM	20%
Lack of compelling business case	19%
Poor integration among data management tools	14%
Other	4%

Figure 1. Based on 857 responses from 179 respondents (4.8 average responses per respondent).
Source: *Unified Data Management*, TDWI Best Practices Report, Q2 2010.