

GOLD rush!

Opportunities abound for organizations able to mine their data. *by David Stodder*



“Data is like gold,” observed Randall Parman, database administrator for the data warehouse at Applebee’s Services, during his keynote at the 2007 Teradata PARTNERS Conference and Expo. “But if you don’t use it, someone else will come along and take the opportunity.” No truer words could be spoken. It is almost impossible to imagine that at one time many businesses regarded data as an afterthought—a byproduct of transactions meant for the general ledger or to be stored away for legal or regulatory reasons. Today, organizations of all sizes regard their data as a potential gold mine that can produce nuggets of information for improving customer relationships and creating more effective business processes.

Business intelligence (BI) has become the preferred methodology for providing analysts and end users with views of information to help them understand business states and directions. Organizations that have invested in BI and data warehouse systems have accomplished a great deal. But these should not be regarded as “finished” systems; instead, they must be the foundation for the next phase of innovation. Keep in mind that technology is only part of the equation; with greater information access and sharing, the management of people and processes must also change.

Whether new or experienced, all organizations have important decisions to make about who needs BI and what they will require going forward. If your organization is just beginning its BI and data warehouse journey, it is crucial that requirements gathering and

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design work look forward, toward business advantages that expanded notions of BI and data warehousing can deliver, not simply at replicating what has been accomplished.

Manage on information

Sharing information wealth and expanding the reach of analytical brainpower are important objectives for many organizations as they seek to improve the development and testing of new products and services. And once these products and services are put in the marketplace, organizations can use BI to drive better processes to support them in sales, fulfillment and other functions. Managing information effectively is critical. No matter how clean processes might look in models or workflow diagrams, bottlenecks often occur when necessary data isn't delivered to decision makers. If the information is not accurate or delivered at the right level of detail, poor decisions can be made, resulting in higher costs and damaged customer and partner relationships.

The best BI and data warehouse systems have played essential roles in providing information that managers use to determine where businesses can lower costs and become more efficient. By connecting BI and data warehousing more tightly with operational processes, organizations can speed up improvement cycles and lower costs further.

Tightening the integration between information analysis and action—that is, the development of actionable information—is part of a significant shift in how organizations want to manage their businesses. The focus has traditionally been on recording transactions and updating core systems of record first, and then using the data later for analysis. Now, organizations want to use information before and during transactions, not just afterward. Then, based on detailed, real-time information about customer behavior or transactions that are under way, organizations can address problem orders before they become recorded transactions and trigger unwanted developments in supply chains or other processes. Real-time analysis can

Benefits of BI

An expanded business intelligence (BI) and data warehouse approach offers many practical benefits. For example, organizations can:

- > **Apply information and analysis** to guide operational workers to extend business innovation rather than slow it down through procedures that are out of sync with strategic goals.
- > **Improve the flow of timely operational information** back from the front lines to business planners, who can adjust strategies to seize market opportunities that might otherwise have gone undetected.
- > **Empower corporate executives and financial managers** to use operational data to adjust business plans and forecasts based on results, not budgets set with old or inaccurate numbers.
- > **Measure and analyze the success of strategic objectives** on an ongoing basis and, through performance management metrics, communicate with front-line managers to adjust execution if performance falls short.

help spot where and when to change pricing, adjust and personalize marketing campaigns, and revise manufacturing schedules.

Making the actionable information approach successful requires a smarter enterprise. Rather than just a select few users, BI and data warehouse systems must provide workers across the organization with access to timely information that offers relevant details and analysis. With fresher data, organizations can update reports continuously and alert managers when thresholds are crossed. The result is that smarter organizations run their businesses with a constant flow of information, not a collection of disconnected and static reports.

Operations: The new frontier

While the BI software market has been successful, industry experts often note that in most organizations, BI penetration is frequently no more than 20% of the potential user population. The other users typically employ spreadsheets, reporting tools embedded in applications or manual methods. Traditional users of BI software—data

analysts, business analysts and technology-savvy managers and executives—perform strategic analysis and reporting based on historical data about sales trends, inventory levels and other indicators. More advanced users employ database systems as well as data-mining algorithms to study patterns and simulate business actions, such as opening a new store or entering a new market. At their best, traditional data warehouse systems effectively meet the BI and analytical requirements of this group of users. But what about the other 80%?

Most of these users work in operations where they make daily decisions and manage business processes that directly influence revenues and the strength of relationships. Operational users include managers and front-line workers in sales, customer support, contact centers, manufacturing and supply chains, inventory and other functions.

In the 2007 Operational BI Benchmark Research Study by Ventana Research, participants were nearly unanimous (96%) in their agreement that making BI technology accessible to all relevant functions in their

operations is important. However, most organizations are not there yet; the biggest percentage of participants (48%) said their “operational” BI deployments currently support 100 or fewer users, not the thousands that they indicated that they plan to support in coming years.

Managers and workers typically have limited access to data sources. If they have access to multiple sources, their view is fragmented by having to look at silos of data through multiple tools, reports and interfaces. The study showed that improving data access is a key reason for expanding BI to operations.

Of course, front-line workers are not the only ones who need access to more sources. Corporate executives and business analysts face similar problems in trying to work with operational data for strategic analysis and performance monitoring. Difficulties in bringing together data silos owned by single-purpose or custom applications and spreadsheets slow down both the understanding of current business conditions and the ability

of executives to adjust strategy. An important way to reduce the information management problems generated by the necessity to access multiple sources is to consolidate data into an enterprise data warehouse (EDW). The study revealed an overwhelming interest in centralizing deployment of operational BI as the best way to manage the complexity of underlying data integration and management requirements.

Enterprise approach needed

In addition, the research study found that customer service is a major focus for operational BI deployments. It is also the business objective that embodies most of the challenges involved in progressing to the next phase of BI and data warehousing. If the organization has customer data scattered across different applications, data marts and other systems—as most do—creating the single, comprehensive view of the customer is difficult. Employees in contact centers, marketing, sales and support must spend more time looking for data than analyzing it. An EDW helps address the challenge of finding relevant information across multiple channels and sources. Along with integrating and consolidating data for use in customer service, other challenges must be addressed:

> **Timeliness.** The Ventana Research study found that 46% of participants thought that for operational BI, information should be updated one or more times a day, and an additional 32% said it should be updated at least once an hour. (See chart at left.) Employees interacting with customers or responding to changes in market conditions demand timely data. Data warehouse systems must therefore load and refresh data frequently and support

Sources of data

While most organizations recognize the advantages of having a single vision of their operation, the reality is many still rely on multiple sources of siloed data.



In a 2007 Ventana Research study, participants were asked to choose one or more of their top operational data sources. Listed are the options and the percentage of respondents who selected them:

47% Spreadsheets

44% Multiple, separate database servers

43% Flat files

42% Operational data stores

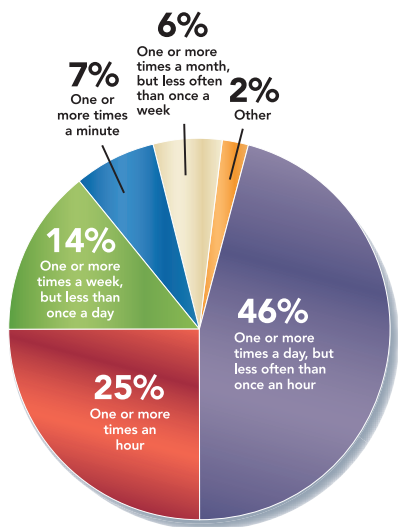
42% Data marts

42% Data warehouses

a mixture of queries without requiring significant (or any) downtime.
> **Accuracy.** As data sources multiply, quality and accuracy usually emerge as information management challenges. About 34% of participants in the study said operational BI users require access to between five and 10 data sources, while an additional 30% indicated more than 10 sources. Accurate data is vital for customer service interactions. Improving accuracy is a motivation for many organizations that are consolidating and centralizing operational BI data into an EDW platform.

Update rates

How often should information be updated to support operational BI effectively?



Source: Operational BI Benchmark Research Study, Ventana Research, Copyright 2007

> **Agility.** As BI extends to operations, systems must support the flexibility necessary to do things like change sales promotions quickly. Managers in operations currently work primarily with single-purpose applications or general-purpose tools (such as spreadsheets), both of which require manual work to adjust information requirements. Organizations should consider enterprise data warehousing as a way of standardizing the infrastructure so that business users and IT managers do not have to rebuild systems to perform information change requests.

Meeting user requirements

As mentioned earlier, nearly all organizations believe that expanding BI is important. The Ventana Research study suggests that innovative companies find it essential to provide timely, accurate and complete information to operations. Today, however, many operational users are frustrated by delays in getting

the reporting, analysis tools and access to data they need. The delays are not only due to technology; expanding BI is also a major change in how an organization shares information and uses it for decision making.

One key to success is getting the user requirements right. An EDW platform can help by allowing IT developers to focus on meeting users' business needs rather than sorting out complex data integration and management issues that the warehouse can manage. Organizations should establish oversight committees that include both business and IT leaders to ensure that requirements are communicated effectively.

As organizations expand BI to new user communities, IT managers and developers must not fall into the trap of thinking that all users are the same. Most users are susceptible to hype, however. "Real time," for example, sounds exciting, but it is possible that only select users actually need it. On the other hand, business and data analysts who have grown accustomed to less-than-

perfect data quality might not realize how much they could benefit from an enterprise infrastructure. Business users and IT must communicate clearly about what is truly needed instead of responding to hype—or, alternatively, resisting change out of habit.

BI and data warehouse expansion can support an organizational transformation from being reactive and not using information effectively to being proactive: that is, using the power of information to address market challenges quickly and aligning action with strategic objectives. Operational employees have long needed BI that could allow them to bring greater efficiency and effectiveness to processes. The time has come to provide the tools to discover information gold in operations before competitors grab the opportunity. **T**

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Address the human factors

Technology development and information architecture issues often dominate when organizations begin an expansion of traditional business intelligence (BI) tools and data warehouses into active systems that support the daily needs of business operations. While these issues are indeed challenging, human factors are sometimes overlooked. Experience has shown that these are often what make or break implementations. What will users be able to do that they can't do now? Will they be able to work smarter and prosper in the eyes of upper management—or lose some of their unique value? The answers must come in the language of business, not technology.

An important step that organizations can take to keep the focus on business benefits is to establish executive sponsors from both business and IT to work together to overcome resistance and process challenges. Often through joint advisory councils or centers of excellence, IT and business leaders can define project goals and metrics as well as make sure that the projects do not run low on resources, which a 2007 Ventana Research study found

to be a significant barrier to successful operational BI deployment.

Higher productivity is a key benefit to communicate. Especially with the development of an enterprise data warehouse, operational users will spend less time trying to find their data and more time analyzing and executing process improvements. More accurate and comprehensive views of customers, partners or suppliers are benefits that will increase operational users' business value to the organization by enabling them to focus on steps that lead to stronger and more profitable external relationships.

Frequently, IT will get pushback from users concerned about losing control of their data and familiar means of analyzing and sharing it through spreadsheets and custom operational applications. Business executive sponsors can provide leadership in these situations by explaining the benefits and communicating to IT managers where developers need to make changes to meet operational workers' needs more effectively. This way, the partnership can improve the potential for rapid returns on the investment.

—D.S.