

Katherine Glassey: Business Intelligence Is a Smart Move

Business intelligence (BI), which lets companies conduct sophisticated analyses of their data, has become an increasingly important technology in the enterprise. Many companies are now analyzing in great detail their sales, marketing, and other data, and they are using the results to increase profits, maximize

important technology with Katherine Glassey, chief technology officer and cofounder of BI vendor Brio Technology.

IT Pro: What benefits are companies deriving from new business-intelligence technologies?

Glassey: BI lets even users who aren't technically proficient look at their data in new ways and draw useful conclusions they otherwise wouldn't have drawn. This helps companies run more efficiently, make more money, enhance customer relations, identify potentially profitable business opportunities, and reengineer business processes.

By analyzing their data in depth and looking at it in a variety of ways, BI users learn many things about their products and services, their customers, sales trends, and more. For example, they can find out who their best customers are and where they can find more of them.

In other words, business intelligence makes it easier for people to answer the questions they've always asked about their companies. And with a business-intelligence tool, they can get to more data and analyze it in more ways. They can delve into the bottom corners of the dustiest back shelves.

In fact, I've heard some companies say there are now three critical applications on their client desktops: the browser, Microsoft Office, and BI.

IT Pro: What have been the

key drivers of business intelligence's increased popularity?

Glassey: There are several. First, many companies have had what has amounted to data jailhouses. They have mountains and mountains of data in ERP systems that cover accounting, finance, human resources, sales automation, and even marketing. All this

Continued on page 77



New Web interfaces aim to make it easier for nonproficient users to get at information locked away in 'data jail.'

efficiency, reduce risk, and so on.

Neither BI technology nor the value of analyzing business data is new. However, the technology's increasing sophistication and ease of use, as well as the rise of e-commerce, has enabled and encouraged more companies and more employees within companies to utilize BI.

Because of these factors, many industry analysts say the BI market will grow very rapidly. IT Professional traveled to Palo Alto, California, to discuss this

Business Intelligence con Brio

Katherine Glassey cofounded Brio Technology and, since 1997, has served as chief technology officer and executive vice president of products and services.

Glassey was involved in business intelligence and related fields long before it became such a popular technology. Before cofounding Brio, she managed application development for Metaphor Computer Systems, a decision-support hardware and software vendor that is now part of IBM.

Her experience with decision-support technology began in 1980 when she cofounded the Decision Support Systems Group as part of Ernst & Young's consulting practice.

detail is being captured in specialized applications that frequently don't make it easy to access, analyze, and report on the data.

In the past, data-access technology was complex and users had to be technically proficient to use it. In other words, the data was only accessible to the 10 percent of workers who were technically skilled, like programmers. However, the other 90 percent also wanted to see the data.

For these people, you have to make it easy to access the data and you have to make it fast.

Business-intelligence technology has changed to meet these needs, and I think this has driven BI's growing popularity.

THE CHANGING FACE OF BI

IT Pro: In what ways has BI technology changed to meet these needs?

Glassey: An important component has been the use of Web-browser-based interfaces. The Web is the critical link that is helping business intelligence go beyond the power users to the rest of the knowledge workers.

In the past, for the power user, you had to equip every single client machine with fairly intricate infrastructure technology that provided very specialized connections to the back-end database. This was the client-server paradigm.

In a browser-based world, you eliminate the need for the client-server connectivity piece. The browser manages the communications among clients and servers, so the software that talks to the database can be centralized on a shared server. This makes it cost-effective to let hundreds or thousands of users access their databases.

Meanwhile, knowledge workers are used to working with browsers, so using browsers as an interface makes it easier for them to use business-intelligence technology.

Successful BI products employ flexible technology. All major BI applications work in a variety of modes: in client-server mode for the power

users who do a lot of complex work on the client; in thin-client, browser-based mode for those who only want to read reports; and, occasionally, in connected mode for mobile users and



IT's role now is to build BI apps that users can run themselves.

others who are out of the office much of the time.

IT Pro: How have these developments changed the way BI is used, and what does this mean for IT departments?

Glassey: One of the major changes is that today's technology reduces IT's involvement and gives end users a tool to do much of the business-intelligence work themselves.

In the past, end users who were not highly technical would go to IT to generate business-intelligence reports and distribute them. However, IT departments are very busy and don't always have time to generate reports right away. Many users don't want to wait and would like to do BI analysis themselves.

So now, with new business-intelligence technology, the IT organization's job has shifted from running BI tools to building BI applications that

users can run themselves. These applications consist of a data warehouse or data marts, and a dashboard-style interface that users can download, adapt, personalize, and grow. This makes the users independent. They can ask and answer their own questions, build their own reports, and share them with coworkers.

The metaphor I use is to think of BI as a theme park. IT's role is to design and build the theme park for the user. IT doesn't escort each person through the park. Instead, they make it safe and easy for users to find their own way. Companies like Brio provide the framework and platform and tools with which IT builds the BI environment.

BI TREND: WEB PORTALS

IT Pro: What are the most important trends in business intelligence?

Glassey: Perhaps the hottest thing in business intelligence right now is the BI Web portal. Portals are relatively new. They've been enabled by the fact that virtually all corporate users have Web browsers on their desktops now.

A portal is like a card catalog and a subscription service rolled into one. It's the place where you store past BI reports, and it's the place in which you receive new or updated reports. Basically, portals make it easier for users to find the information they need without worrying about the technology that created it. For example, EBI (enterprise BI) portals can display reports in various topic-based categories and can even provide previews or summaries of their contents.

I think vendors like Brio will also develop ways for portals to be used for collaborative work, not just to access reports. Collaboration is an important technology trend, so before long you should expect to see technology that will let users publish into a portal and keep track of the changes they, and others, are making.

From an IT standpoint, it's important that these portals are secure and personalizable, to make sure users can access only the data that they need to

do their jobs. For example, you don't want engineers accessing human-resources-related data, or one partner viewing another's transactions.

BI TREND: ACTIVE CONTENT

IT Pro: Are there other important BI trends?

Glassey: A very interesting development is the ability to deliver a BI data-analysis report, over the Web or by e-mail, that is presented as active content. By active content, I mean that recipients can both view the report and interactively customize their own further analysis of the information in the report. The report may go out with data wrapped in an OLAP (online analytical processing) engine, which lets users drill down, aggregate, subset, and investigate any of the data elements in the report.

For example, an active-content report might have been created as a series of queries that reduced tens of millions of rows of raw sales data to 10,000 rows of analyzed data about a specific product or geographic region. With active content, the recipients of the report could continue to analyze this subset of the data and look at, for example, product characteristics and customer demographics. So a company would not have to spend time or money building different versions of

the same report. Users would have the power to analyze a single version of a report in different ways themselves.

But for users to be able to analyze reports this way, the BI tools they work with must be amazingly powerful and amazingly simple. Otherwise, users either can't or won't use them.

BI TREND: PREPACKAGED APPS

IT Pro: BI vendors used to customize applications for customers. Hasn't that changed during the past few years?

Glassey: Every business-intelligence company that I know of, including Brio, is no longer just selling tools and technology. We are packaging our technologies into ready-to-go applications. Because they are prebuilt, these applications usually cost less than it would cost to build a custom solution from scratch. And the prepackaged applications typically plug into the customer's site, show the customer how to use the software, and can be deployed fairly rapidly, with just a bit of work on data conformation.

Although companies in different industries have different needs, some of the more generic horizontal applications being built by ERP vendors have created common sets of data. So BI vendors are able to wrap a com-

mon set of analytical applications around some of those data sets.

TECHNICAL ISSUES: QUERY, ANALYSIS, REPORT

IT Pro: There are three stages of business intelligence: query, analysis, and report. What are the key issues in the query part of the process?

Glassey: The key query-related issue is making the query interface easy to use and effective. The most challenging technical issue is to enable the query itself to work effectively with all the different types of data that people are using now. There are and will be many more data sources than in the past. We have MDD (multi-dimensional database) data, OLTP (online transaction processing) systems, text, images. It gets crazy. And sometimes, a query will have to access data from multiple types of sources.

Although there are many specialized solutions that work well with each type of data, today's users want just a single tool that will get them to any data, regardless of the source.

IT Pro: What are the key analysis-related issues?

Glassey: There are two primary issues: speed and visualization. If analysis is slow and cumbersome, it won't be used. Speed is an issue, particularly when working through a browser. This is an especially important factor when you have to work with many round-trips between your computer and the server. Vendors will have to solve this problem to deploy thin-client solutions effectively to the masses.

I believe visualization is critical because users always need assistance before they can really grasp the significance of the numbers before them. I still believe that if a picture is worth a thousand words, it's probably worth a million numbers. You need to receive results graphically as much as possible. For example, if I see a chart rather than raw numbers, I can

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instantly see relationships between data sets.

I don't see as much value as some of my counterparts in flying through fields of data with 3D goggles. As I see it, the challenge is turning tons of detailed information into visually simple, appealing, and compelling images on the screen; and providing an interface that behaves intuitively.

Some of the key trends in data visualization lie in the presentation of information derived from data mining.

IT Pro: Is data mining, with its complex data-analysis capabilities, becoming a more important part of BI?

Glassey: Some people use data mining in the preparation phase of BI analysis, to flag interesting data for future consideration. But many BI systems don't use data mining at all.

Although data mining can add a tremendous amount of value to users' understanding of their data, at least for now, almost all of the solutions require you to be technically proficient. Most data-mining programs require that you know and specify in advance exactly what type of statistical, mathematical, and analytical operations you need to perform. Typically, you can't just make simple queries and have the technology pick the right transformation or models and then tell you the answer.

But I think that over the next couple of years, vendors will make some effort to make the technology behind data mining more easily usable, more intuitive, and more easily personalized. Then data mining will get to the general business community.

OLAP is still the key business-intelligence analysis component. It's very easy and powerful, particularly because it can work with a data set multidimensionally. You can dynamically look at data in different ways. For example, if you are analyzing when employees are performing several tasks, you can look at the data in terms of the tasks, the people, or the times they're performing the tasks.

IT Pro: What are the key report-related issues?

Glassey: The critical issue with reporting is that reports should be deliverable in multiple formats.



IT departments need to adopt a data warehouse/data mart strategy that enables effective BI.

Some reports, particularly those that aren't current and that'll be used occasionally as a reference, can be stored in a centralized server or on paper, or can be archived as an electronic file. Users can access these when necessary.

However, current, important reports must be delivered in the format that's most appropriate for the various types of recipients. For example, some recipients will want or need reports on paper.

But these days, reports also need to be delivered in HTML to the Web. This is important for mobile users. And some reports are brief enough to be accessed more easily online than on paper. However, you need the data to appear in a format that will fit on a screen, even on the screen of a laptop. So even though the report will have

the same information, it'll look completely different. Perhaps it'll have different fonts and colors.

BI vendors are using combinations of HTML, PDF, and server-staging strategies to deliver the right information in the appropriate format to the right users.

The critical factor is that you should be able to make one pass against your data warehouse or your OLTP system and spit out all of these formats efficiently. You don't have to run the data over and over to get reports in various formats.

THE ROLE OF IT

IT Pro: What role should IT play in companies that want to adopt BI?

Glassey: Of course, companies need networks, and they need the Web, and they need effective applications to run the business. But they have these things already. The most important thing IT should do to enable effective BI is to adopt a data warehouse/data mart strategy designed to support BI. The data warehouse is the critical enabling factor that many companies don't already have.

Furthermore, IT has to adopt a new outlook and understand that its job is to enable end users to do more themselves. It is essential that IT build starting-point BI applications from which users can gain benefits on their own. After all, letting users help themselves is one of BI's primary benefits.

Remember the old saying: Give a man a fish, he eats for a day; teach a man to fish, he eats for a lifetime. IT's role is to teach fishermen; provide them with rods, reels, and bait; and help stock the pond full of fish. ■

Lee Garber is news editor for IT Professional. Contact him at lgarber@computer.org.