

Slow Road To Fast Data For trucking company Schneider, BI software was a godsend. But implementing it wasn't always heavenly.

By Eryn Brown
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(FORTUNE Magazine) – In summer 1998, Bill Braddy traded in the Pentagon for Schneider National, a big transportation and logistics outfit in Green Bay, Wis. The former Army colonel had just finished a stint as deputy director of a simulation facility where the Department of Defense trained high-ranking officials in crisis management. His mission at Schneider, while not exactly a matter of national security, would be a sensitive one: Figure out how to search through and harness mountains of valuable but disorganized corporate data quickly enough to make the business more efficient. "We were drowning in data but starving for information," he says of the crisis Schneider faced. "It was a significant emotional event for the company."

Data? Emotional? You heard right. Braddy isn't being cute or overdramatic when he talks about data management. Companies have been able to use technology to do some very cool stuff--to reach customers in new ways, to automate operations. But one thing many businesses haven't been able to do easily is use the data they've collected to find and stamp out waste across operations. Sifting through corporate data was supposed to make executives

more efficient. Much of the time, though, it's just made them more confused.

To attack Schneider's problem, Braddy did what a lot of corporate IT folks are trying these days: He installed business intelligence software. BI, as it's often called, helps businesses view and catch and dissect and reassemble and write reports about all sorts of information lurking in the dark corners of their databases. If BI is linked to clean, carefully tended data--a really big "if"--it can work very well. At Schneider, Braddy is counting on BI to show managers where outsized costs (and benefits) exist and why. So far it's off to a good start.

To understand why a trucking company cares about gargantuan databases, it helps to understand what Schneider does. The family-owned company's main business used to be renting out its signature pumpkin-colored trucks. Today Schneider is the biggest transportation and logistics company in North America, sending goods by truck, rail, and sea all over the world; it also brokers freight to other carriers and provides some financial services. A big chunk of its \$2.4 billion in annual revenues comes from Schneider Logistics, a division that makes sure its customers' wares get to the right place at the right time--taking care of freight payments for the likes of Wal-Mart and chemical giant BASF, coordinating shipment of aftermarket parts for General Motors and Ford.

Logistics and transportation are two of the most data-intensive pieces of Schneider's business. So when Braddy signed on, he turned to their information woes first. The company's computers were high powered, but they had to run complicated analyses on almost ten terabytes of data strewn across eight different databases. Schneider collected all kinds of documents: invoices, tracking paperwork, and late-payment notices, as well as delivery information zapped in via satellite from truckers, warehouse operators, and accounting offices all over the world, every minute of every day. According to Braddy, if

you transferred all the bits and bytes Schneider was juggling onto 3.5-inch floppy disks, you'd have enough cargo to load ten of the company's 53-foot trailers.

The volume of data, in and of itself, wasn't the problem. The problem was that you practically had to be a rocket scientist (well, an SQL programmer) to find anything in there--and the process was very, very slow. Let's say a Schneider analyst wanted to figure out why it cost the company 20 cents per pound to make deliveries to a huge Ford dealership in Texas, but only 17 cents to most other locations. There could have been a number of reasons for the extra cost, but she could only pick one at a time to investigate, so she might have chosen to look into how long an average shipment to the dealership had been in transit over the past six months.

To get to the precise logs she wanted, she would have to write up a request and deliver it to one of her department's data engineers--who in turn would write a program to fish out the needed data, run it, dump the data he found into another report, and e-mail that report back to the analyst. The process could take as long as a week and would often prove fruitless (if, for example, the problem was related not to time in transit but rather to shipment weight). "If the information was good, you used it," remembers Schneider CIO Steve Matheys. "If it wasn't good, you probably used it anyway. That's the way things were run."

What really bugged Braddy was that this setup erected a wall between the data and the people who really understood them. "The guy who knew how to get to the data and the guy who knew how to use it were two different people," he says. "I had to find a tool that would let a business professional find what he was looking for without needing an IT professional."

With the advice of Stamford, Conn., technology-consulting firm Meta Group and a team of as many as 30 people from Schneider, Braddy spent five months evaluating some 23 BI solutions, eventually zeroing in on eight finalists. In February 1999, an executive group voted unanimously to use a suite of software from an Ottawa company called Cognos, mainly because one of the products in the suite, PowerPlay, seemed to offer the most advanced data-analysis capabilities.

PowerPlay excels at two things: presenting key data to laypeople and making it easy for them to analyze that data in depth. To do this the software takes records from a company's databases (specified by people in IT) and pours them into specialized information arrays it calls cubes--which are basically stacks of manipulable spreadsheets. A cube that the business analyst uses today, for instance, houses all kinds of data about load status--if a shipment is waiting to be assigned to a carrier, picked up, in transit, delivered, or paid for. Using the software she can look at the average time that loads spend in transit to the Ford dealership, click on a button to sort the data, see immediately that the problem lies somewhere else, and then--this is the beauty part--run a second analysis instantaneously. Once she finds where the problem is, she can drill down on elements in the cube until she gets to a single smoking-gun document. The entire process takes less than ten minutes.

Just five months after they chose the software, it was up and running--thanks in part to the fact that Schneider had already devoted two years and 60 people to a complete overhaul of its massive databases. Technicians, for example, had worked to smooth out the ten terabytes of information item by item (making sure that dates were written uniformly and so on). "That required real intestinal fortitude," says Bob Grawien, vice president of applications development, who worked with Braddy on the cleanup.

A few weeks after the PowerPlay launch, Braddy began seeing results. A business analyst in the trucking division was trying to track down reimbursements owed to Schneider for certain kinds of auto work--money that had been practically impossible to collect in the past. Using PowerPlay, the analyst was able to pinpoint, in a matter of two weeks, hundreds of cases in which payments had fallen through the cracks. From that one sweep, Schneider was able to recoup all the money it spent on Cognos software in the first place. (While Schneider won't reveal how much it spent, a similar large installation, says Cognos, might cost as much as \$2 million.) Over the past two years, Braddy estimates, the software has helped Schneider grab a total of \$2.5 million in "hard, quantifiable savings."

Now Braddy is extending the Cognos tools across the company; by the end of the year, four of Schneider's five business units, including transportation and brokerage, will be using the software. And more than 200 customers are tapping into the system through a tool called InterAcc that Schneider created using Cognos software. For a small subscription fee starting at a few cents per invoice, customers get access via the Web to cubes, analysis tools, and portions of Schneider's database so that they can track their own logistics. (While Schneider isn't planning to make it a major profit center, InterAcc is already breaking even.) Sven Meyer, a freight payment manager at BASF's Mount Olive, N.J., office, loves the program's speed: "When a carrier calls me with a complaint, I go immediately to InterAcc and look up their account. I don't have to put them on hold."

Ironically, Schneider techies say that the company's new databases deliver information so efficiently and flexibly that some users simply don't know what to do with it. Maybe that's why a few customers balk at studying their logistics, no matter how much money it might save. Says Mark Rourke, vice president of customer service for Schneider Logistics, with a grin: "They say, 'That's why we hired you.'"

Applying a Little Business Intelligence

"All things to all companies" isn't always the way to go. Here's how Staples, Trimac, and Deltek applied business intelligence software exactly where it was needed.

Jennifer Caplan - CFO.com | US

After spending years rolling out complex and costly enterprise resource planning (ERP) systems, many companies today are sitting on massive storehouses full of raw, largely transactional data. To extract the most important information from those databases — and to make the calculations that can provide the basis for managerial decisions — is often the role of business intelligence (BI) software.

As business intelligence applications have become increasingly sophisticated, a number of vendors, including Cognos and Hyperion, have made them their bread and butter. Tools that began with basic reporting capabilities now offer at-a-glance "dashboards" of key operational and strategic metrics, often with E-mail alerts that can function much like a "warning light." When managers have been alerted — or any other time they need to — managers can drill down to ascertain whether particular business units are performing to goal, whether inventory turns have decreased, whether customer service levels have fallen, and more.

Suppose you're not ready for a full-fledged BI rollout? Take heart: Here's how Staples, Trimac, and Deltek put business intelligence software to work — exactly where it was needed.

Staples Redesigns the Showroom Floor Finance executives at Staples, the \$11.6 billion office-supply retailer headquartered in Framingham, Massachusetts, launched the company's business intelligence initiative in 1997. Having rolled out a budgeting and planning application from Hyperion, managers at the fast-growing enterprise felt they needed an analytics tool to help measure overall

corporate performance and product profitability. That's when the company turned to Hyperion's business intelligence platform, Essbase XTD.

"Our goal was to achieve one version of the truth," says Marcie Lerner, vice president of finance at Staples, "and to track key performance indicators that were essential for running our business."

Using Hyperion's technology, Staples built product profitability models, which help managers determine the optimal mix of products and the best strategies for presenting them. The system provides graphical representations of high-level data — say, revenues and costs for a line of products from a particular vendor. But from their desktops, executives can also drill down to more-granular levels — for example, the costs of marketing, distribution, and rent attributed to a particular stock-keeping unit (SKU). Highlighting and click-and-drag capabilities allow executives to flag exceptional cases.

Staples is now able "to create a more fully allocated P&L," says Lerner. "Previously those allocations were crude and simplistic." A more nuanced view of profitability by product has helped Staples managers reduce inventory turns, negotiate with vendors on a stronger footing, and obtain more-optimal product mixes.

Take furniture, for example, a product category that at first blush seems to be a top performer, since it tends to produce generous gross margins. After Staples managers factored in the costs of storage, distribution, handling, damage, labor, and rent, the overall profitability of furniture turned out to be significantly lower than that for less-space-intensive categories like basic office supplies.

That realization led Staples managers to reduce the floor space devoted to furniture, says Lerner. Now the company devotes more room to "higher-inventory-turning categories such as chairs and filing cabinets."

Trimac Stays on the Straight and Narrow Calgary-based Trimac, a provider of bulk transportation and logistic services, maintains a fleet of 3,000 trucks that carry chemicals, fertilizers, and other materials to 130 terminals across North America. In a business with low margins and with assets that are continually on the move, information analysis is key to the company's survival.

"The only way to stay afloat in this industry is to be exceedingly efficient," says Ted Barnicoat, CIO at Trimac. "That means you have to have data, be able to analyze it, and recognize when things are not going according to plan."

Trimac certainly had plenty of data after it rolled out applications to automate truck dispatches and billing, and integrated them with financial and HR databases. "The real challenge was analysis," says Barnicoat. "We needed to look at every haul to ensure that each one was meeting our contracted terms" and to seek out further efficiencies.

To compare the details of every trip against pre-defined standards, such as mileage or loading and unloading time, the company turned to Cognos Series 7 business intelligence applications. In 2000, the software provider's PowerPlay, Impromptu Web Reports, and UpFront Portal modules were deployed to 50 Trimac users, and then to 80 more.

From web-based desktop portals, Trimac managers can drill down into a specific haul to find out just where a particular driver might be facing problems. "There were a number of occasions when we were not doing something right," says Barnicoat. "We were either taking too long to load, or showing up with the wrong equipment, or not billing something right." Not only have BI tools "helped us increase the utilization of our fleet," but Barnicoat also maintains that these efficiencies are saving the company between \$1 million and \$2 million per year.

Although Trimac has been using business intelligence applications primarily to analyze orders, managers are planning to extend their

analyses to other key metrics including accounts receivable, margins, equipment utility, and maintenance. In addition, Trimac will soon implement a reporting tool that will enable its customers to log on to a secure extranet and analyze their individual accounts.

Deltek Gets a Stronger Grip on Receivables Deltek, a provider of enterprise software, turned to Cognos "to help us fix what was burning us the most," says CFO Lori Becker — "the high number of receivables over 90 days old." Adds Becker, "It's hard to keep track of over 8,000 customers."

One way to do that, says Forrester Research analyst Noha Tohmay, is through a system that automatically notifies company managers when something goes awry. If an event falls outside the parameters determined by the company, the system dispatches an E-mail alert to the appropriate people.

Deltek turned to Cognos NoticeCast to send alerts about customer relationships. The system sends detailed reports to account managers about each of their customers, including information on the status of receivables, whether a customer has placed a support call, and the degree of urgency of the call. When a customer's account slides beyond a threshold that Deltek specifies, the system sends an E-mail alert to the appropriate manager — even to handheld devices such as Blackberries and digital cell phones, if need be.

The account manager can view the exact invoice sent to the client and E-mail it to other parties for further discussion, if necessary. The system also allows Deltek's accounts receivable department to publish reports displaying outstanding invoices for specific account managers.

E-mail alerts alone are only "helpful in a very limited manner," contends Tohmay, "because the user still needs to resolve a problem." Strong monitoring tools should not only have the capacity to synthesize available data, they should also have the analytical

intelligence to come up with solutions and recommendations.

Business Intelligence, One Step Beyond Although a number of companies have recognized the benefits of devising and implementing a coherent BI strategy, analysts maintain that most have not yet laid the organizational groundwork to reap the benefits of available technologies.

For one thing, numerous business intelligence applications exist on top of the individual vertebrae of the ERP backbone: supply chain management, customer relationship management, budgeting and planning applications, and financial analysis, for example. True, these BI tools are proving useful for extracting and analyzing data at a departmental level — but this piece-by-piece implementation relegates enterprisewide analysis to little more than a distant possibility.

"There tends to be a wall between the enterprise applications and the decision maker," says Patrick Connolly, a worldwide product marketing manager at software provider J.D. Edwards. Part of the problem: Most corporations still expect the IT department to decide how data and business processes should be integrated, says research director Bill Hostmann at Gartner. "All they are doing is creating application spaghetti as a result," he adds.

According to Tom Hoblitzell, an analyst at consultancy Answerthink, one-third of his company's clients don't have the integrated, cross-functional strategy necessary for a successful BI implementation. Frequently, adds Hoblitzell, the will, leadership, cross-departmental collaboration, and skill level required to implement such a strategy is weak or lacking altogether.

As a good next step, analysts recommend that companies create a cross-functional business intelligence team — with the endorsement of top management — charged with the responsibility of devising and implementing strategy. According to Hostmann, a "BI competency group" can go a long way toward setting data standards; defining key performance indicators; and deciding how the numbers will be

computed, where key data should be extracted, and who should have access.

Business Intelligence: Working Smarter

Business Intelligence: Working Smarter

(Page 1 of 4)

A new wave of workers—from sales reps to logistics staffers—use business intelligence tools on the job.

When a sales rep from Mölnlycke Health Care U.S., a maker of surgical and wound-care products, gets ready to hit the road to visit a customer, she is likely to warm up her computer and obtain a report showing how many scar-treatment dressings or synthetic gloves the customer purchased over the past year—and how that compares to last year's orders or another customer's orders in a nearby territory. Before the company developed its business reviews, sales representatives compiled the information from online analytical processing tools and AS/400 queries from sales, pricing, contract and demographic files, says Susan Dean, business intelligence manager at Mölnlycke's U.S. headquarters in Norcross, Ga. Now, in a matter of minutes reps can get the data necessary to work all areas of a hospital or facility. The reviews show history, usage, product mix and penetration by product line.

"We sell to distributors, but have to know where our products are going so we can service those facilities," Dean says. "Before these [business] reviews were developed, [territory managers] had to go to [multiple] places for the information and create the reports manually." That left room for errors, and the process was time-consuming—it took as long as four hours to collect the data.

Welcome to the latest era of business intelligence applications in which a broader assortment of employees—such as sales reps, purchasing managers and logistics workers—can easily get sales, shipping or other information to analyze trends and shape business decisions. Employees in the finance department, for example, use these tools to better track corporate performance, and workers in logistics can identify the best routes for deliveries.

In the past, business intelligence was largely the domain of corporate analysts, who used applications to look for trends in large data fields and create complex models of what to expect in the future.

What's changed? The latest tools are more versatile and easier to use, say executives at organizations deploying business intelligence software. "The evolution of BI [business intelligence] has allowed us to provide users with secured multidimensional analysis and highly formatted reporting, containing information from multiple sources, accessed via the Web, using a browser from any computer," Dean says.

Products are available from best-of-breed players such as Business Objects, Clarity Systems, Cognos and Hyperion Solutions; enterprise resource planning vendors including SAP and Oracle; and from companies such as Microsoft and IBM with their database offerings. The average annual cost for 10,000 users on a business intelligence system running in a Windows-based environment, including software licenses, dedicated hardware and maintenance, is about \$722,000, according to Ventana Research of San Mateo, Calif. And enterprises are finding effective ways to use the technology to generate returns such as improved processes, reduced costs and increased sales.

Freeing Up Sales Reps

Take Mölnlycke Health Care, which began using Cognos' ReportNet for sales reporting in 2001. The company subsequently standardized on the Cognos platform for most of its other business intelligence reports.

Territory, regional and national account managers—a total of about 200 worldwide—use the reports to prepare for sales calls to hospitals, group purchasing organizations and other customers, Dean says. A territory manager, for instance, can create a single report that shows several key performance indicators such as annual product usage for the previous five years, rolling 12-month usage by product, pricing by product and contract details. The data comes from different sources, including reports on merchandise sent to distributors, contract information maintained in the company's homegrown contract system, and master data from its sales database.

Thanks to the tools, Mölnlycke has realized savings of more than 600 man-hours in information technology, and thousands of hours among the sales staff per year—by eliminating labor-intensive data gathering and analysis processes. For a sales rep, less time spent on research means more time can be devoted to customers on sales calls.

Before deploying a system, Mölnlycke's information-technology department met with sales and finance managers to understand their needs and processes so I.T. could select the most effective product,

Dean says. The company considered Hyperion and Business Objects, and chose Cognos because it had been an industry leader for many years and had a more extensive solution, Dean says. She declined to disclose the cost, but says that "we have seen a significant ROI [return on investment] on each project we have completed."

The biggest hurdle? Employee acceptance, Dean says. "Our users never had a 'self-service' reporting solution prior to the BI deployment. They had very low expectations and worried that it would cause more work for them once BI was deployed. We overcame their concerns by involving them throughout the entire process," she says.

Helping Purchasing Managers

Quaker Chemical Corp. is using business intelligence to better monitor global financial information, including the cost of supplies. The Conshohocken, Pa.-based manufacturer of specialty chemical products built Quaker Warehouse Information Systems—which includes 123 data warehouses tailored to individual business process and more than 700 "data marts" or subsets of a data warehouse often intended for use by a single department or function—to meet the needs of different employees.

Quaker uses SAS Business Intelligence software to collect data on orders, invoices, customers, suppliers and associated costs. An objective: evaluate Quaker's profitability across regions, customers, products and services to determine where to focus company resources, says Brad Manning, chief information officer.

About 820 employees, mostly managers in purchasing, finance and sales, have access to the Web-based business intelligence application, says Manning. Prior to this tool, Quaker couldn't get a global view of its operations.

In one example, Quaker saw savings by better tracking pricing trends worldwide, Manning says. If a buyer in one location receives a discounted price from a supplier, the information is available to buyers in other locations, enabling them to negotiate lower prices for supplies and save money. He declined to disclose the amount.

Manning says Quaker expects to see other benefits as its use of business intelligence matures. One trend will be to feed data such as order, sales and shipment information into the system more immediately to learn about trends faster.

The key to a successful business intelligence deployment:

"Sponsorship should be at the highest levels in the organization," Manning says. "The design should be driven from all of the primary decisions that are made across the company, and the data required to make those decisions."

Logistics workers at the Hillman Group, a Cincinnati company that distributes hardware, keys and other products, are using Information Builders' WebFocus software, and are testing its use with geographic information systems (GIS) software from ESRI to improve shipping processes.

Hillman ships products from 10 U.S. distribution centers to retailers such as Home Depot. One business intelligence-GIS application enables Hillman to determine the most efficient shipping routes to reduce freight costs. "If we're shipping out of one distribution center when we should be shipping out of another, we're losing money," says Jim Honerkamp, Hillman CIO.

Using its system, the company can call up a U.S. map that plots its distribution centers, then add a layer that shows UPS shipping zones and costs, and another layer that indicates the products to be shipped and to where. Hillman uses this data to determine which distribution center to use to ship a particular product.

By optimizing routing, the company expects to cut time for shipments and reduce fuel costs, slashing shipping expenses by as much as 25%. Hillman spent \$35,000 on the business intelligence and GIS software, and expects to save triple that amount the first year, Honerkamp says.

Looking ahead, Ventana Research's Everett says the emergence of open source business intelligence tools will accelerate adoption in coming years. Why? Lower costs for sure, he says. "But the number one driver was a developer or architect [within the company] ... Someone in the organization says we can use this," then launches a project, has success and the company rolls out the software more broadly.

Business Intelligence: Working Smarter - ' 6 Tips for embracing '

(Page 4 of 4)

As business intelligence tools become sharper and more readily available, a new wave of workers—from sales to logistics—can analyze business trends faster and make better decisions. As much care as ever needs to be taken when deploying business intelligence tools. Here are some recommendations

Looking for Intelligence in Ice Cream Companies have mastered collecting information, but not what to do with it. That's made data-sleuthing "business intelligence" software one of the few hot areas in tech.

By Julie Schlosser
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(FORTUNE Magazine) – Just beyond the souvenir shop and down the relic-filled hallways in the Ben & Jerry's factory in Waterbury, Vt., massive pipes pump out 190,000 pints of ice cream each day.

Throughout the day, tractor trailers pull up, pick up the mountains of Cherry Garcia or Chunky Monkey pints, and deliver them to depots. From there, the ice cream is shipped out to 50,000 grocery stores in the U.S. and 12 other countries. Once it's on the freezer shelves, it has the magical effect of curing a broken heart, satiating a sweet tooth, or possibly just heightening someone's cholesterol level.

For Ben & Jerry's, that's only the start of the journey. At the company's headquarters in Burlington, Vt., just miles from where the founders opened their first shop 25 years ago, the life of each pint--from ingredients to sale--is tracked. Once the pint is stamped and sent out, Ben & Jerry's stores its tracking number in an Oracle

database; then it puts it under the microscope. Using software from a company called Business Objects, the sales team can check to see if Chocolate Chip Cookie Dough is gaining ground on Cherry Garcia for the coveted No. 1 sales position. Down the hall in the marketing department, the company checks to see whether orders online require Ben & Jerry's to make a donation to one of its philanthropies. The finance people pop the number into their journals to show results. Since they started using the software, they've sharply cut the time it takes to close their monthly books. And probably most important to a company focused on customer loyalty, the consumer affairs staff matches up the pint with the 225 calls and e-mails received each week, checking to see if there were any complaints, and if so, which supplier's milk, eggs, or cherries didn't meet the company's near-obsession with quality.

Ben & Jerry's may cultivate a down-home image, but as a unit of \$47-billion-a-year Unilever, it depends just as heavily on the stats for its success. And to get those figures, it relies on so-called business intelligence, or BI, software: a plain-vanilla name for programs that crunch huge quantities of data in search of trends, problems, or new business opportunities.

"Huge" may be an understatement. In the 1990s companies spent billions of dollars installing giant IBM, Microsoft, and Oracle databases and data warehouses and then shelled out more on hiring consultants to link the software with just about every bit flooding into the company, from factory inventories to HR information to sales leads. Large retailers typically now have 80 terabytes' worth of information on their products--equivalent to 16 million digital photos or 320 miles of bookshelf. Sears has around 70 terabytes (70 million megabytes) of data, Kmart more than 90, and Unilever 106 terabytes in North America alone. And still that's relatively puny: At the end of last year, Wal-Mart had 285 terabytes in its data warehouse.

But Wall Street doesn't give out awards for collecting data; what the companies needed was a way to put the information to work.

Otherwise, says Rebecca Wettemann, vice president of research at Nucleus Research in Wellesley, Mass., "it's like having a bank account with millions of dollars in it but no ATM card. If you can't get it out and can't make it work for you, then it is not really useful."

So in the past few years companies have started demanding ways to make sense of what they've been collecting. Today BI is one of the few sunny spots in a dreary market for technology. According to Forrester Research in Cambridge, Mass., 44% of companies at the end of 2002 were considering buying BI software this year. Merrill Lynch, in its December survey of CIOs, found that the software topped the list of tech spending for 2003. Overall, the market for BI is expected to grow from \$4.7 billion this year to \$7.5 billion in 2006, according to brokerage house A.G. Edwards.

In perhaps the surest sign in Silicon Valley that a market is ripe, Microsoft announced plans that indicate it's ready to take it over. The company said in mid-February that it would soon integrate BI reporting features into its popular SQL Server database: a major step toward enabling even the most technically illiterate users to parse information using Excel and other Windows-based tools. The biggest players in BI all insist that there's enough market for everyone. And so far the numbers bear that out. SAS Institute, the \$1.2-billion-a-year privately held software giant in Cary, N.C., has seen a 6% hike in its revenue in the last year. Cognos, a \$491 million company in Ottawa, and Business Objects, a \$454 million company in San Jose, have both seen their revenues rise over 30% in the past two years.

While the concept of BI is hardly new, most of the companies and people using it are. Industrial giants like GE and Procter & Gamble have been slicing and dicing their statistical data for decades; now pharmaceutical manufacturers, retailers, universities, and other institutions are demanding the software. Part of the interest comes

from increasing pressure on CIOs to deliver on the investments they've made in systems in the past few years. BI software is seen as an attractive way to do that. The software is relatively inexpensive--it typically costs between \$35,000 and \$75,000, though large enterprise installations can cost millions--and easy to set up. Ben & Jerry's needed only a few weeks to install its system, whereas a large database project can take years.

The results can also show up quickly. Red Robin Gourmet Burgers, a 196-location chain in Greenwood Village, Colo., purchased software from Cognos to track everything from marketing promotions to which state's diners order the most chicken burgers (Oregon, by the way). The restaurant soon found it was wasting \$10,000 on unused Alfredo sauce; it has since switched from buying the white sauce to making its own. The Sesame Workshop uses the same software to predict how Elmo dolls will sell on the shelves. And this holiday season, in the midst of launching its latest line of clothes at 183 Sears stores, retailer Lands' End used Business Objects to monitor sales store by store, helping cut back orders to a third of the previous year's amount. "When sales are not growing hand over fist, companies are looking for ways to cut costs and find unmined opportunities," says Ed Maguire, a software analyst with Merrill Lynch.

The software is also allowing employees all around companies to, in effect, run their own investigations. Until now diving through data was reserved for experts--technologists or statisticians who would generate massive reports that would be handed out during meetings, flipped through, then shelved. BI companies now promise that anyone can use the technology. Not that this stuff is simple: The business intelligence software has to worm its way through the entire data center to root out patterns. Typical BI applications first pull information out of giant databases into so-called data marts--smaller clusters of similar information that can keep financial data in one

area, inventory data in another. Then the software is ready for the hunt. When a Lands' End product manager wants to know, say, what the hottest-selling turtleneck has been in the last month, the BI software first runs the request through a so-called semantic layer, which translates the query into database-speak (at Lands' End, white turtlenecks go by the handle "66780," for example). Then it uses the terms to gather the relevant data from the right data mart, organize it, analyze it, translate it back, and offer an answer.

The employee sees only the last part. Just about every company now offers stand-alone or browser-based software that the industry calls "dashboards," which presents graphical displays of inventory levels, sales info, and other urgent gauges of day-to-day business.

At Staples, the \$10.7-billion-a-year office-supply store, BI recently moved into the mainstream. When Alan Gordon, director of sales forecasting, joined the company in 1993, the chain had 150 stores. His bosses asked him to determine where the company should build new locations--not for his real estate skills (which were zero) but because of his background in statistics. Using programs from SAS, Gordon created a modeling system that takes in 40 types of data, from locations of competitors to sales tax by zip code, and spits out ideal expansion sites. Of the almost 4,000 sites a year Gordon evaluates, about 100 are targeted for a new store. That has translated into 950 stores since Gordon's arrival, almost all of which were sited using SAS. "You've got to have a pretty good argument if you go against the model," he says.

Now Gordon's data hunting has become common across the company. Upstairs from his office in Staples' Framingham, Mass., headquarters, the finance department has started relying more and more on BI software. For years Marci Lerner, the vice president of finance, ran all of Staples' budgets on Microsoft Excel. In the late '90s

she turned to software from Hyperion Solutions, a \$492-million-a-year company in Sunnyvale, Calif., that has a speciality in financial reporting.

Within a year of installing Hyperion's Essbase, the finance department realized Staples had been misusing the display space in its stores. The shops had long devoted part of their floor space to desks, file cabinets, and other furniture. It had seemed to make sense: The big products delivered better gross margins than pens and paper. But the BI system revealed that the strategy was a mistake. "We found that when you factor in all the costs of storage, distribution, handling, damage, labor, rent/occupancy, etc., the overall profitability of the category is much less than other less bulky, less space-intensive categories," says Lerner. "A desk also takes more labor to sell because you need someone who actually knows a little more about it."

Since then, Staples has shrunk the furniture department in most stores and eliminated it altogether in others. More room for things like Sharpies, yellow pads, and Avery labels helped the company keep its net income growing at a 12% compounded rate over the last five years. The same software led the team to cut back on the floor space allotted to displaying PCs. Now 400 locations stock less computer inventory but offer build-to-order options.

Staples also used BI to reality-test the recommendations of consultants. One who studied Staples stores in 2001 reported that locations did better when they kept computers and other technology on the left side of the store. "Everyone was wondering if we had discovered something new about our customers' behavior," Gordon says. But before starting a 1,100-store overhaul, he ran some BI queries. His finding? There was nothing to back up the consultant's insight.

With BI now accepted outside the tech department, the software companies are trying to push even deeper into corporations. In the past few months they've started promising software packages--often called business performance management or corporate performance management--that will tie the data in to the best practices of the industry or peg it to specific company goals. The idea is to offer executives and their teams quick ways to fix their business. How? That's not entirely clear. Warns Nate Root, a research analyst at Forrester: "What the market is trying to do is put a business spin on BI rather than a technical spin. BPM is just using BI tools to try to run your business better." Part of the confusion comes from the fact that BPM and CPM are not products, but rather umbrella terms, says Frank Buytendijk, a research director with tech analyst Gartner. "We sometimes hear vendors say that CPM is the next big thing after BI. That is nonsense."

In the meantime, companies are using BI not just to solve problems but also to eliminate false assumptions. Last spring Ben & Jerry's noticed a swell in complaints from Cherry Garcia ice-cream-pop customers, most of whom were irritated that the product had too few cherries. The company matched the complaints against the shipment records and analyzed them using Business Objects. First it eliminated the chance that this was a regional problem--complaints were coming from all over the country. Then it queried information on the manufacturing process; the recipe and ingredients all turned out to be normal. Finally, after nixing just about every possibility, the company discovered the problem: The photo on the ice-cream-pop box was not of the ice cream but of frozen yogurt--a product more laden with cherries than the paler-pink ice-cream treat. Ben & Jerry's changed the image on the box, and the complaints melted away.

Your Finance Department Is Second-Rate

Not certain how your finance department stacks up? Here are ten markers of mediocrity.

You can't benchmark the performance of one finance department against another, says Blythe McGarvie, CFO of the Paris and New York-based BIC Group. The same numbers, she argues, are handled by different companies in too many differently nuanced ways for direct comparisons to be practical. Many finance chiefs, consultants, and academics *are* willing to make those comparisons — but they disagree on where to draw the lines.

McGarvie and the others we interviewed for this article, however, all agree on several indications that do provide a certain measure of a finance department's effectiveness. (Within this article, "finance department" refers to all those areas over which the CFO holds sway.)

Steer clear of these treacherous areas, and you have no guarantee of success; run afoul of them, on the other hand, and your finance department simply cannot be considered among the best. Your company and your career may fare poorly as well.

1. Slow Closes

A properly skilled staff should produce a complete financial statement within ten days of the quarter's end, says Miles Stover of Crossroads LLC in Irvine, California. Seven days, he adds, should be long enough to produce a preliminary "flash" report suitable for internal distribution.

Stover, who's been an interim CFO on behalf of Crossroads at multibillion-dollar conglomerates and at tiny private concerns, grants an exception for companies with annual revenues under \$50 million — but even for these companies, he maintains, the quicker the better.

Dave Peralta, CFO of software provider Arbortext in Ann Arbor, Michigan, doesn't hold to such a strict rule of thumb, but he agrees that "the longer it takes to close, the more inefficient the department becomes." Tasks tend to expand to fill the available time unless the finance chief has the discipline to fix a date, then push the department to meet it.

Efficiency aside, why else should you concern yourself about a leisurely close? It can be a sign that policies may need some tweaking — say, because closings are held up by laggard invoices that trickle in on the last day of the month. There's a simple remedy for that one: Move up the deadline to earlier in the month to give your staff some breathing room.

Sometimes, of course, appropriate policies and procedures are in place, but they're being ignored by employees outside your department. "That's when the CFO needs to put in some calls to get things back on track," offers Peralta. (For more on the efforts of CFOs to close the books more quickly, see "[Virtual Close: Not So Fast.](#)")

Now there's *slow*, and there's *very slow* — it's not simply a process problem when the close is a full quarter behind. Witness power producer Mirant, which filed its 10-Q for the period ending June 30 on November 7, and pharmaceutical giant Bristol-Myers Squibb, which plans to file its third-quarter 10-Q in February 2003.

"If this was just a process problem," says James Owers, a finance professor at the J. Mack College of Business at Georgia State, management might have felt compelled "to bring in a new cast of characters in the CFO function." Owers notes that these tardy filings indicate wider problems — restatements coupled with investigations by federal regulators, in the cases of Mirant and Bristol-Myers Squibb.

2. Outrageous Audit Fees

Insiders and outsiders have different opinions about whether high fees

spell trouble for the finance department. Kris Onken, CFO of Logitech International, a manufacturer of personal digital devices based in Fremont, California, maintains that rising audit fees are often an indication that a company's business is becoming increasingly complex. At a previous employer, she saw audit fees jump 25 percent while the company worked through growing pains.

Daniel Weinfurter, president of Parson Consulting in Chicago, counters that high fees, including those for non-audit services, can be traced to an underperforming finance department that requires an abnormal amount of "cleanup." Weinfurter, whose Chicago-based firm specializes in ferreting out corporate finance problems, warns executives to keep tabs on the fix-it bills for such things as slow shipments, bloated inventory, out-of-control receivables, and big write-offs for items that should have been handled earlier in the reporting cycle.

Paying a CPA \$500 per hour to correct general-ledger mistakes is throwing money away, adds Miles Stover. Accounting errors should be corrected in-house by a staffer who makes \$60 per hour. (Another option, many firms have found, is to have their outside audits performed by one of the many "[Second-Tier Audit Firms.](#)")

3. High DSO

Days sales outstanding (DSO) — the average time taken by a company to collect payment from its customers — can be calculated using figures from the 10-Qs or 10-Ks of a public company. When DSO rises, it also appears on the radar screens of company shareholders.

Daniel Weinfurter says an increase in DSO usually stems from a lapse in the accounts receivable process. Collection calls, for example, might not begin until 30 days after the past-due date. A related headache manifests itself as high customer adjustments, which can lead to higher DSO as well as hinder the usefulness of forecasts.

Although the CFOs we spoke with consider such adjustments to be

"business as usual," all agree that when the number of adjustments creeps up month after month, something's amiss. Perhaps it's simply a warning of sloppy quality control on the assembly line, but faulty control procedures in the finance department are more common and more directly controllable.

There's no rule of thumb for DSO, mainly because industries vary greatly in the speed with which they collect. Tracking your receivables aging pattern is one useful yardstick; even better would be to compare your company's DSO with that of its peers. (To keep tabs on DSO and many other metrics, most publicly traded U.S. companies can compare themselves with their peers by entering company tickers in the [CFO PeerMetrix interactive scorecards](#).)

4. Multiple Payments

Are your vendors seeing double? When they bill you once and you pay them twice, you may ensure that your company's credit is stellar, but it's not great for cash flow. Kris Onken remembers when, as a newly hired controller for a previous employer, three different vendors notified her of double payments. "I can only imagine how many more were out there that never reported it," she laments.

Your accounts-payable system is probably not to blame. Most standard accounts-payable software incorporates a safeguard that matches up each check with an invoice. Even off-the-shelf small-business software that retails for under \$100 usually has that invoice-matching feature.

"Double payments, or slow payments, often have their origins in operations," observes Dave Peralta, and to some degree the finance department must rely on the diligence and discipline of the operating units. Bill Hurley, practice director at Parson Consulting, notes that new, sophisticated procurement systems have added another layer of complexity to the payment process. True, these trading systems may standardize the information gathered from vendors — but if an accounts payable employee runs into a snag while negotiating four or five software filters, an exception can take weeks to resolve.

Whether double-payment problems begin with poor compliance by operating units or with haywire procurement systems, the buck stops with the finance department. (That's a big reason so many companies are "[Working on the Chain.](#)")

5. Earnings Restatements

According to the U.S. General Accounting Office, during the past five years 10 percent of all publicly traded companies restated their earnings because of accounting irregularities. About 250 companies, the GAO estimates, will restate by the end of this year, far more than the 92 companies that restated in 1997.

Most restatements aren't a harbinger of fraud, simply the result of common accounting errors or oversight. Parson's Weinfurter maintains, in fact, that two-thirds of all restatements are caused by trip-ups related to revenue recognition. A restatement usually won't bring a company to its knees, adds Logitech's Onken, but "it's still a black eye." (Or is it a knockout punch? In a poll conducted for our special report "[CFOs: The New Patsies?](#)," more than 60 percent of respondents thought that an earnings restatement was the biggest threat to a CFO's career.)

Many errors that might lead to a restatement are caught by internal audits and corrected. When they slip by, says Professor Owers, it's a strong signal that the accounting and financial functions are having a problem with accounting judgments.

6. Manual Entries

The sole proprietor of John's Coffee Shop can automate his books for \$80 with an off-the-shelf software package. Not only will he free himself from manual entries, his accountant tells him that he'll be able to shore up his financial controls.

For larger companies, however, ridding the finance department of manual entries and stand-alone spreadsheets is proving to be a Herculean task (think "Augean stables").

Parson's Hurley says that 99 percent of his clients — these are Fortune 500 firms, mind you — still work with spreadsheets or disparate financial systems. Only the Fortune 50, claims Hurley, are really breaking away from their reliance on spreadsheets, since only these companies have the resources to connect far-flung systems with middleware and to wean employees from spreadsheets by retraining them.

Spreadsheets are still handy for running "what if" scenarios as well as budgeting and forecasting exercises. But when the subject is financial controls, notes Crossroads' Stover, relying on stand-alone spreadsheets instead of financial systems "violates the audit trail." More opportunities exist for mistakes — or wrongdoing — and widespread use of spreadsheets means that a company's financial-database history is useless.

Balance sheets and income statements, Stover maintains, should be posted within a systems environment. (For more, see "[Core Values](#)," our ERP buyer's guide.)

7. Lack of Transparency

Accounting is a straightforward science, says Arbortext's Peralta, and transparency is a non-negotiable item for both internal and external reporting.

From an internal perspective, the department must respond to questions with timely and logical answers. When the mechanisms that deliver reports are too confusing, or when the systems that should be running routine reports are spitting out incorrect or incomplete information, that inefficiency should raise a red flag.

Deal with it promptly: While poor report generation creates an unproductive finance department, it also hamstring business units that depend on updated financial data. When operating units don't get the information they need to support their management and planning decisions, they're not likely to keep quiet.

As for external reporting, Professor Owers gives straightforward advice: Meet disclosure requirements and do it quickly. He praises broadband services and products purveyor Scientific Atlantic for management's quick announcement about the financial impact of the bankruptcy filing of Adelphia Communications, a 20-year customer of Scientific Atlantic. Footnotes, Owers counsels, should follow the spirit and not just the letter of the law. (Easily said — but faced with tough new reporting requirements, many CFOs are having difficulties with "[The Fear of All Sums.](#)")

8. Dubious Structures

First, and most dubious: If your internal audit team reports to the CFO, you would be hard-pressed to find an executive, regulator, or Sunday-morning talk-show pundit who did not bristle at the potential conflict of interest.

Every CFO we interviewed for this article insists that this line of report is a grievous governance deficiency that's wide open for exploitation. (The flip side, as exposed by our article "[There's a Monster in Finance,](#)" is that the newfound power and independence of internal auditors poses its own threat for finance chiefs.)

Then there's the case of the company whose treasurer and controller each reported their own cash number — different numbers, that is. (Apparently the discrepancy stemmed from an inflated cash sum reported by the treasurer, who ignored the float on the cash balance.)

It turns out, says Michael Feder, a partner in the Chicago office of turnaround firm AlixPartners, that the two executives were aggressively competing for face time with the CEO and CFO. A little competition is fine, but it should never trump a clear delineation of duties.

Another crack in the structural foundation is improper division of duties. For example, internal audit rules usually require that the employee that receives checks doesn't post them, and that the employee who prepares checks doesn't sign them.

Finance chiefs agree that its often impossible for very small companies to separate the administration of payables, receivables, and bank-statement reconciliation among three different people. For companies of more than 100 employees, however, it should be mandatory.

9. Overly Cozy with Sales

At its root, this is a problem of revenue recognition, and of training the sales department about just how serious an issue this can be. Just last week, Computer Associates landed back in the headlines over new allegations that it had shifted revenue from quarter to quarter, a practice that could violate generally accepted accounting principles (GAAP).

Accountants from Logitech International, declares CFO Kris Onken, are routinely sent out into the field "to put the fear of God into the sales staff." ("Routinely" used to mean about twice a year, but since Sarbanes-Oxley it's been four times in four months.) Onken insists that the finance department is responsible for educating the salesforce about when to book revenue — "but there can be no doubt who is boss."

What's on the syllabus? It's a refresher course in revenue recognition rules, for new and existing employees, including "what if" scenarios and a question-and-answer period. In addition to the sales and marketing staffs, Onken's team trains other supply-chain workers such as order-entry and shipping employees.

Sales employees should understand the nuances of different contracts, and other supply-chain workers should have at least some familiarity with them. For example, one Logitech agreement states that the company will ship products to a customer warehouse, but the inventory title is not transferred until the customer actually pulls products from the warehouse — so revenue cannot be recognized until that time.

In a good organization, say many CFOs, the sales and marketing departments should be aggressive about order flow, and the accounting department should lend a helping hand when it can do so appropriately. But when "lending a hand" leads to postponing sales problems — or even straying from GAAP — a company might pass "second-rate" and drop to the bottom of the barrel. (For more, see RevenueRecognition.com.)

10. Staff Turnover

Where there's churn, there's trouble, says Stover, and it's usually associated with burnout or poor management. Accountants are precise by nature, adds Onken, and the CFO has to cater to that part of their personality.

Procedures that aren't sharply defined, processes with too much wiggle room, moving targets for deadlines, inadequate staffing, systems that don't support job functions — all are incentives for employees to walk.

Some CFOs believe that substandard transaction systems are the most common cause of dissatisfaction in the finance department. Accountants detest the idea of manually extracting numbers from a system that should deliver them automatically.

Bill Hurley looks instead to procedural breakdowns as a major cause of discontent. The practice leader for Parson Consulting points a finger at departments that wait until the last day of the month to run the numbers, instead of updating receivables, payables, inventory, and cost of goods sold on a daily or weekly basis.

No one likes to "do the big cleanup" — especially when it's the one thing that seems to arrive on schedule, month after month. (For more on best practices and motivating employees, see "[What Works: Building a Strong Finance Team](#).")

The best reason to keep staff turnover low might be to help communication flow more freely within the finance department. When

your finance professionals and other staffers are unhappy or untrusting, word of potential problems may not reach your ears until it's too late.