

April 3, 2006

THE JOURNAL REPORT: TECHNOLOGY

Business Solutions

A New Look for Number Crunching

By MICHAEL TOTTY
April 3, 2006; Page R6

It may not quite roll off the tongue, but it's true: A picture is worth a thousand pieces of data.

Companies are being inundated with a tidal wave of information thanks to technology that can track every sale, every stage in a manufacturing process and every step in a supply chain. And that's only a fraction of the information stored in a business's computers. There's too much data for any manager to easily make sense of it all.

A new breed of "visual analytics" software aims to make it easier than ever to decipher all that information. The software takes data from multiple sources -- including databases and spreadsheets -- and creates simple visual representations, such as charts, graphs and maps. They're easier to grasp than pages of data, and they are much more flexible than regular charts and graphs. With just a few clicks, you can manipulate the pictures, checking out the effect of different variables or testing alternative scenarios.

Software that displays data as charts and graphs isn't anything new, of course. "Business intelligence" applications can crunch numbers to find trends and patterns, then display the results visually. But those programs are designed for trained analysts. The pros must painstakingly create very specific problems for the software to analyze, such as spotting a company's top-selling products in the Midwest in the first quarter. If a manager then sees the charts and wants to highlight a different variable -- say, how the top sellers performed in the East -- he must go back to the experts and have them create yet more charts.

With one of the new tools, a sales manager can look at a table showing sales for all of her company's products, and then with a few clicks zero in on the top seller in the Midwest for February and March. Then she can shift gears and see how that same product performed in other regions and other months.

"That's where [the information] really comes to life," says John Hagerty, a vice president at AMR Research in Boston.

Searching for Patterns

Scientists and researchers have known for a long time that the best way to decipher vast quantities of data is to display it visually. Instantly recognizing patterns in a chart, graph or diagram "is wired into our visual system as part of the evolution of humans," says George Robertson, a senior researcher at Microsoft Research, the software giant's R&D arm. While it's not easy to find meaningful trends in, say, a spreadsheet full of figures, "if you put it in the right visual representation, those patterns just leap out at you."

Visual-analytics software is about as easy to use as Microsoft Corp.'s Excel. "It's more democratic, in that you don't have to have the expertise to use it," says Tom Lange, director of modeling simulation for corporate research and development at Procter & Gamble Co. P&G uses visual-analytics software from Spotfire Inc., Somerville, Mass., to search for patterns in patent filings and to identify problems in its supply chain.

Even experienced data analysts like the tools' ease of use. Karen Conway, director of global product planning and pricing at Molex Inc., a Lisle, Ill., maker of electronic connectors, used to rely on a Microsoft Excel spreadsheet to analyze prices on its more than 100,000 different products. Since each price is based on about 20 different factors, including the cost of manufacture and the cost of shipping, finding prices that might be out of line with the market could be a time-consuming, complicated process.

Last summer, Ms. Conway began using a visual-analytics tool from **Advizor Solutions Inc.**, based in nearby Downers Grove, Ill. The tool lets her do the same analysis, only more quickly; using simple menus, she can select all the information she wants to examine and with a few mouse clicks have it instantly displayed in a graph. The results can be easily grasped by anyone.

For instance, using a series of bar charts, she can compare the actual per-unit prices quoted to customers with their expected asking prices. So, at a glance, it's apparent which prices are out of line with expectations. She can then zero in on the out-of-line price, getting such details as who is selling and managing the product -- and if necessary, quickly look at all prices from that product manager.

"You're able to spend more time understanding the relationships rather than in manipulating the data," Ms. Conway says.

A Better Call

Presentations using the software can be a lot more persuasive than those using static charts and graphs.

San Francisco-based FiberTower Corp., which operates networks that connect cellphone towers to phone-network switches, needed a better way to identify market opportunities. When FiberTower goes into a market, it tries to identify the cellular towers that can produce the greatest revenue at the lowest cost.

But the analysis isn't as straightforward as it sounds. A good-size market might have 5,000 cell towers, and each site has four or five key characteristics that determine whether it would be profitable to target, including who owns the site, where it's located and how many cellular carriers use the site (the more, the better).

Though such data could be displayed in Excel, the company's marketing department wasn't able to get good insights from spreadsheets. Using visualization software from Seattle-based Tableau Software Inc., the marketing department could do the analysis in a fraction of the time and make better-informed decisions.

David Leeds, the company's co-founder and vice president of sales, last year used Tableau to persuade the company's management team that Detroit would be ripe for expansion. He created a chart that roughly mapped all the tower locations, using green circles to show price (bigger circles meant a higher price) and red squares to illustrate capacity, a proxy for potential revenue.

Then, with a few clicks, he highlighted the sites with two or more carriers, which have the potential for higher revenue. The result: Detroit was seen as an extremely attractive market.

"Once data are presented in a manageable way, a decision can be made in seconds," Mr. Leeds says. "The conclusions really start to jump off the page."

--Mr. Totty is a news editor for The Journal Report in San Francisco.

Write to Michael Totty at michael.totty@wsj.com