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SPECIAL REPORT: TECHNOLOGY

Get the Picture

In the age of information overload, visualization software promises to cut through the clutter

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Max Alexander was drowning in data.

The Carphone Warehouse Group PLC executive manages a sales network that grew more complex last year when the London-based company, one of Europe's largest mobile-phone retailers, started selling fixed-line services as well. Information on sales began flooding in not only from channels such as telemarketers and the company's retail outlets, but also from certain grocery stores around the U.K. that were marketing Carphone's fixed-line service.

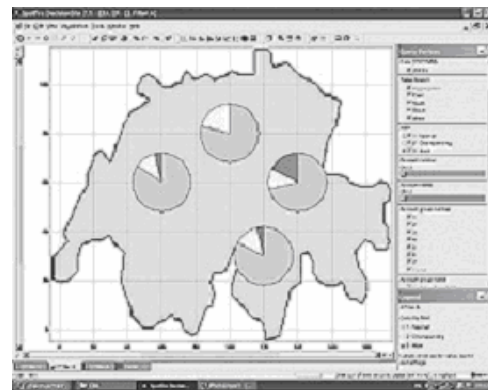
"We had sales updates every 15 minutes being pulled into ad-hoc spreadsheets," says Mr. Alexander. "You had to pore through reams and reams of data" to make a decision about increasing or decreasing resources to a given sales channel.

Mr. Alexander found a solution in software from Fractal Edge Ltd. of London. Fractal Edge is one of several vendors of information-visualization software, a type of program that takes vast amounts of data and organizes it in interactive graphical formats -- pictures that make the information much easier to grasp quickly and to explore thoroughly.

In Carphone's case, the software shows Mr. Alexander circles representing each of the sales channels he manages -- one for retail outlets, one for telemarketing, etc. The circles change color based on each channel's sales performance, giving him a quick overview of which channels are on target. "In moments, I can identify the

areas that need attention," he says. "It has manifestly improved our reaction time." If he wants, more details become available with each click on a circle, down to the level of an individual retail outlet's sales, for instance.

Easy As Pie: These charts give a quick overview of sales at four branches of an insurer in Switzerland, with details available at the click of a mouse.



Customer-acquisition costs will drop, Mr. Alexander believes, as he can more efficiently direct resources to the most effective sales channels. And he estimates he's spending 20% less time analyzing sales data, giving him that much more time to devote to other aspects of the business.

Executives in a broad range of industries around the world are finding that information-visualization software helps them make critical business decisions by cutting through information overload. Instead of wading through endless spreadsheets and text analyses, executives can get a quick overview with the graphics offered by visualization software, and still

find whatever level of detail they need with a few clicks of the mouse. Some are even finding that the visual presentations allow them to see patterns they wouldn't have noticed otherwise.

'It's Really the Moment'

The market for visualization software is heating up for a number of reasons. More-powerful PCs are able to use the software on desktops. The new emphasis on corporate governance means that top executives have to have a better fix on all aspects of corporate results -- and visualization software helps them do that. And corporate cutbacks mean that companies don't have the staff to analyze a lot of data coming in, so visualization software enables those left to be more efficient.

"It's really the moment for these kinds of applications, because the focus is on cutting costs," says Gabriel Fuchs, who uses Spotfire Inc. software in his job as senior sales and marketing manager in Lausanne, Switzerland, at La Suisse Assurances SA, a unit of Swiss Life Holding AG of Zurich.

For Andy Palmer, the chief information officer at Infinity Pharmaceuticals Inc., visualization software isn't just a tool for greater efficiency -- he can't imagine his company operating without it.

Infinity's chemists analyze the properties of millions of chemical compounds in search of the tiny percentage that have the potential to be developed into drugs. "Without the visualization, you can't possibly sift through all this information," Mr. Palmer says. "The data is just too complex; sitting and looking through spreadsheets is impossible."

Infinity, based in Cambridge, Mass., uses Spotfire's DecisionSite software to organize data on chemical-compound characteristics such as molecular weight and solubility, along with factors like availability and cost. The resulting charts give chemists at least an initial impression of a compound's promise at a glance.

Visualization software also can be used to make information more accessible to customers. J.P. Morgan Securities Ltd. in London used software from **Panopticon Software AB** of Stockholm to build an application called CreditMap, a graphical representation of activity in the corporate-bond market.

Before CreditMap, the brokerage firm's customers could read text reports on the corporate-bond market and view various tables of statistical information. But the market is so extensive that it could be difficult to keep things in perspective or to be aware of many of the investment opportunities.

CreditMap presents the corporate-bond universe as a quilt of rectangles on a computer screen. The quilt is divided into industry sectors, and the rectangles within each sector represent bond issues. The size of the rectangle indicates the size of the issue, and the color indicates the issue's performance. So at a glance, investors can see which sectors and which individual issues are hot, and whether an issue's size fits their investment needs. Clicking on a rectangle opens a window that gives basic information on the issue -- including its ratings and the name and phone number of the analyst who covers the issue -- along with a drop-down menu offering detailed research.

"It can look a bit scary," says Lee McGinty, European vice president of quantitative strategy at the London firm, which is a unit of New York-based J.P. Morgan Chase & Co. "But it's not half as scary as a thousand-row spreadsheet."

Passing It On

Some companies are helping their business by integrating visualization tools into their own software products. EPlus Inc., for example, sells software that helps companies manage procurement and suppliers. But it's a tall order, as executives struggle to assimilate purchasing data from sources scattered throughout a company. "It's a tower of Babel," says Ken Farber, president of the Herndon, Va., company. "The ability to

correlate data and to visualize data is something clients have been asking for."

By integrating visualization software from Antarctica Systems Inc. of Vancouver, British Columbia, in its own products, ePlus has tried to deliver on that customer request. Antarctica is able to take "an extravagant amount of information and map it" with visual indicators such as size, color and shape, Mr. Farber says, so a client can, for example, quickly see what's been paid to noncontract vendors in the past quarter.

Others use visualization software to look for connections they might otherwise never notice. Lucent Technologies Inc., of Murray Hill, N.J., uses software from the anacubis division of British company i2 Ltd. to help organize vast amounts of business information Lucent gathers from various sources. The resulting graphical presentations can suggest business opportunities -- such as possible partnerships -- by giving a visual representation of companies with products or technologies that might complement Lucent's own products or patent portfolio. Such opportunities could easily be missed by someone simply reading through vast and continually growing databases of business information.

Visualization software has entered the public sector, as well. At the U.S. Agriculture Department's National Agricultural Statistics Service, "our main problem was data dissemination," says Irwin Anolik, a department mathematical statistician in Fairfax, Va. The NASS Web site provides information on agricultural trends in hundreds of pages of statistical tables and charts, most of which have to be downloaded and viewed separately.

But Mr. Anolik has redesigned portions of the NASS site with the help of Inxight Software Inc. of Sunnyvale, Calif., to make the information more coherent. One new chart, for instance, allows the user to quickly see how all 50 states rank in acreage of harvested cropland, and how they rank in several different crops, including soybeans, corn, wheat and

tobacco. Running the cursor over the bar representing, say, Louisiana's cotton output, reveals the exact figure. Clicking on a given state makes it easy to read the figures for all of that state's crops. Columns on the chart can be moved around so that, for instance, corn output can be placed next to wheat or hay output, allowing for easier comparisons.

The new charts are a boon both to visitors to the site and NASS workers. "Before, we would have to do hours of research" for schoolchildren, farmers, researchers and others who would call NASS for help finding statistics, says Mr. Anolik. Now, people can more easily find information on their own, and NASS workers can find answers more easily for those who still call. The Inxight software "really does let you see patterns and structure in the data that you'd never see otherwise," Mr. Anolik says. "It's really nice for getting the big picture."

"For me," he adds, "this is easier to use and a whole lot more fun" than statistical tables.

-- Ms. Borzo writes about technology and the Internet from California.

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