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Analyze This

Rich graphics help firms get an overview of performance, exposures and risk, but visual chart-based trading is still a way off. *By Emily Fraser*

If there were ever a good time for a financial services firm to be able to view its complete risk profile at a glance, it is now. Keeping a watchful eye on firm-

to read through and comprehend every bit of information," says Forrester analyst Ken Poore, author of the research report *Visualization: Time to Take On Text Interfaces?*

characteristics of the market," says Bernie Weinstein, director of BGCantor Market Data.

BGC Partners' tool allows traders to compare the relationships between US Treasuries and futures based on real-time market data from Cantor's eSpeed subsidiary and BGC Partners. It uses graphics and color to show the supply and demand characteristics at the bid and ask frontier within the greater context of the market. "If there is a heavy overlap of supply beyond the immediate bid and ask, traders can see that right away by looking at the chart. The current bid and ask will be in the middle of the graph and on the edges, they can see if there is a bias in terms of overhead or volume," he says. If the market looks likely to come at them at a lower bid, for example, traders may want to wait or lower their bid, he says.

There is also a graph that shows intraday patterns for that day and a color-coded tick

"As we added more and more information to our screens we saw it was hard to immediately grasp some of the trends and patterns and supply and demand characteristics of the market."

Bernie Weinstein, BGCantor Market Data

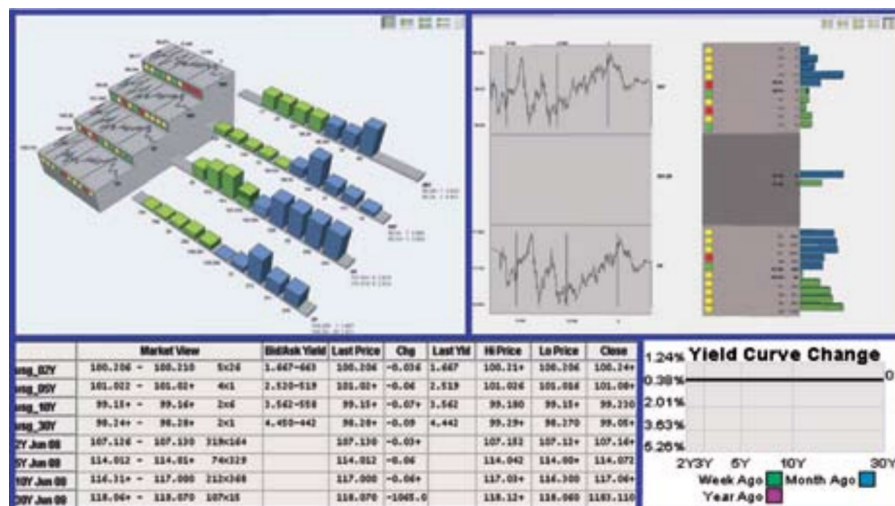


wide exposures is more critical than ever. And the need to monitor how individual traders are performing was painfully underscored by the recent rogue-trader scandal at Société Générale (SocGen) that cost the French bank \$7 billion. Such safeguarding requires synthesizing and interpreting vast amounts of information.

Data visualization software is increasingly used for business intelligence (BI) across the financial services industry to help display large amounts of information from multiple sources in an easily digestible way—although it still has a way to go before it reaches mainstream adoption.

Visualization can take the form of simple pie charts and graphs to complex, constantly updating graphics providing several layers of context with data extracted from large Microsoft Excel tables, databases or even real-time market data feeds. "Visualization software provides a way for someone to skim through a large amount of information often from various sources and get insight into a trend or a sentiment change without needing

Interdealer brokerage BGC Partners' data visualization application G3 Vision was designed to help customers that were drowning in market data. "As we added more and more information to our screens, we saw it was hard to immediately grasp some of the trends and patterns and supply and demand



Cantor's G3 Vision

strip that shows the last 10 trades in case the trader's eye left the screen for a few minutes. "It gives people the ability to grasp these things more rapidly than somebody who is analyzing the traditional displays—particularly when it gets more complex," he says.

FORTIS FORGES AHEAD

Brussels-based Fortis Bank embeds visualization technology from Swedish software vendor Panopticon into the client-facing products that Fortis' structured products division provides to institutional buy-side firms, corporates and retail private banking clients. The tool, part of Fortis' portfolio management system for its buy-side clients, provides heat waves signaling portfolio correlation changes, economic scenario testing and mark-to-



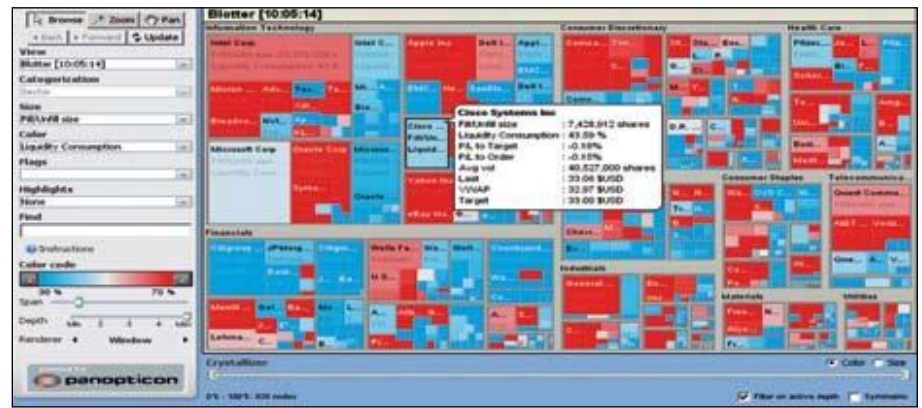
"Every bank is launching structured products with different names, but most of the time the components will be similar. This makes it difficult for people to distinguish between one product and another."

Dirk-Emma Baestaens, Fortis

market information. It also provides visualization of data for the middle-office, such as marginal value-at-risk (VaR) analysis, risk/returns analysis, benchmarking and tracking-error analysis, says Dirk-Emma Baestaens, head of the Fortis development group.

The Panopticon tool is configurable to display any data set—including real-time market data feeds from Reuters and Bloomberg—in an active chart called a Treemap. The user defines a set of data to be viewed, for example a trader's order book. Orders to be filled appear as boxes. Larger boxes represent larger orders, and the color represents how easy these orders will be to fill. Once the order is filled, the box moves to the right side of the screen under "filled orders." Users can also scroll over the various boxes and additional information instantly pops up.

The tool allows the firm's customers to better understand their complex structured



Panopticon's Treemap

products portfolios. "Every bank is launching structured products with different names, but most of the time the components will be similar," says Baestaens. "This makes it difficult for people to distinguish between one product and another."

Fortis' clients can quickly weigh the level of returns they seek against the risks they want to take. "You can configure your Treemap and the list of products that satisfy your criteria will pop up. That's an extremely important feature, because if you are dealing with 2,000 to 3,000 structured products, it's very difficult to summarize all those aspects," he says. Subsequently, asset managers can use the tool to perform simulation analyses for different scenarios—for example, interest rate, equity scenarios—to gauge the impact on their portfolios before deciding to buy the product, Baestaens says.

"If you have enough mark-to-market data, you can look at correlations between different underlyings, between different currencies, different maturities of those structured products and you can implicitly have some portfolio type of approach," Baestaens says. The tool provides a handy way to look at volume data—either in nominal or notional terms, or in risk-weighted terms—as well as returns, yield, and risk factors such as VaR, conditional VaR, volatility and more. Baestaens says. There is a plug-in for Excel, which lets people visualize data stored in the huge spreadsheets. "This is particularly useful as everybody uses Excel," he says.

Baestaens' group uses the enterprise version of the software, but it is also

available as a software developer's kit (SDK) version.

RISK, REAL-TIME DATA

Since the US sub-prime meltdown in the second half of last year, Brian O'Keefe, Director of Product Management, has seen increased interest in Panopticon's ability to provide a visual overview of risk. "We've been asked by many sell-side firms—especially those that have taken the big hits on this—what we're offering along the lines of analyzing credit, and our response is that it's the same solution, but now point us to that data set and you'll be able to visualize it. We have seen increased demand," he says.

Panopticon sells directly to 60 clients worldwide, two-thirds of which are in financial services, including five of the top 10 banks, says O'Keefe. Clients like Fortis make the product available to their own customers, so the actual number of firms that use Panopticon is probably about 400, he says.

Seattle-based Tableau and Tibco-owned Spotfire also offer similar data visualization capabilities. O'Keefe recently left Spotfire. "They brought me into Panopticon to build up their financial services business and what drew me was the fact they had real-time streaming data into a visualization application," he says.

Spotfire, which is currently used by six of the top 15 global asset managers, is not used for the visualization of real-time streaming data. "What traders will do is frequently refresh their Spotfire portfolio analysis with



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Ken Poore, Forrester

recent updates from their real-time feeds, and even automate that refresh based on market triggers that send new data to Spotfire, or based on time—for example, anything from every 15 seconds to once a day. Whatever makes the most sense for their portfolio analysis,” says Roger Obera, vice president of product strategy in the Spotfire division at Tibco Software.

Tableau, likewise, does not offer real-time visualization. “We do see traders and financial analysts using Tableau—but more from the perspective of rapidly examining massive amounts of historical data and models,” says a spokesperson for the vendor. The tool offers a range of different types of visuals beyond heatmaps, including various types of charts and graphs.

Cantor’s G3 Vision does display real-time streaming data, but this is currently limited to US Treasuries and futures. The firm has plans to extend the product to display other securities, which will be announced later.

Kevin McPartland, senior analyst at research firm Tabb Group, predicts that in the next few years, the market data providers themselves will offer more in this space. “The market data aggregators—the Reuterses and the Bloombergs—will continue to enhance their packages to give more ways of charting data and viewing data,” he says, although he doubts that actual trading from the charts will become very widespread.

USES BEYOND BI

The role of visualization on a trader’s desktop is growing. Order management system (OMS) and execution management system (EMS) providers increasingly offer more graphics, charts and other visualizations of ever more complex data. French OMS provider Linedata,

for example, plans to add increased visualization capabilities to version 6.8 of its flagship OMS LongView, scheduled for release later this year. Senior vice president for product management strategy Gavin Little-Gill describes the new capabilities as a quantum leap over what the OMS currently offers.

“Traders face two major problems. They have an information overload, and at the same time they need to be able to react faster to changing market conditions,” says Little-Gill. The OMS will be customizable to display various nuances of an individual order. Rolling the mouse over certain icons or pieces of information, users can see additional notes pop up, which they can read or move on.

In general, however, the majority of OMSes and EMSes remain matrix-based, with rows and columns rather than rich graphics, says McPartland. Visualization is most often found in business intelligence applications rather than on the trading front lines, he says.

Flashy, three-dimensional, front-of-house technology exists for trading applications, but it is still seen as bleeding edge and widespread adoption so far has lagged, particularly on the sell side, he says. “There have been some very impressive demos but it will take a while to grow faith with the traders,” he says. “When situations get crazy—as has been the case a lot lately—traders want to use what they are most familiar with. I don’t think they would trust a visual chart-based trading method,” he says.

On the sell side, in particular, the need for digesting and taking action on large amounts of data is generally met by algorithmic programs or complex event processing systems, reducing the need for visually-rich applications on the front desk, McPartland adds.

New versions of Microsoft Excel offer more and more data visualization capabilities—in the form of pie charts, graphs, and heatmaps or temperature charts—although these remain somewhat superficial, Fortis’ Baestaens says. “An Excel temperature chart will give you one input and spread it if you wish in three dimensions over space of that input. It doesn’t go as deep. Excel is not meant to be a visualization tool,” he adds. While the amount of data that can be visualized with Panopticon goes deeper and broader than Excel, there are still limitations, he says. “You have only three levels you can highlight. I would love to add other dimensions but then you would need

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to go to three-dimensional types of software, which are wonderful, but our clients will not have that software, so that’s useless,” Baestaens says.

The adoption of visualization software in the workplace in general is slowly being driven by the emergence of visually appealing consumer products—from Apple’s iMac and iPhone to sophisticated computer games and social networking sites such as Facebook and MySpace, according to Forrester’s Poore. Mobile phones and handheld devices sport snazzy screens with intricate vibrant icons instead of plain lines of text, and social networking sites provide ways to drill down deeper and deeper into friends’ profiles with ease.

Poore says that the generation born after 1980, sometimes referred to as Generation Y, Digital Natives or Millennials, who are growing up with these gadgets and capabilities, will play a big role in driving workplace adoption. “Within the next three years, everyday workers will start to see large segments of their user interfaces becoming more visual,” Poore says. McPartland is less sure: “Its use will grow but it’s not going to change the world,” he says. ■



Tableau Desktop