

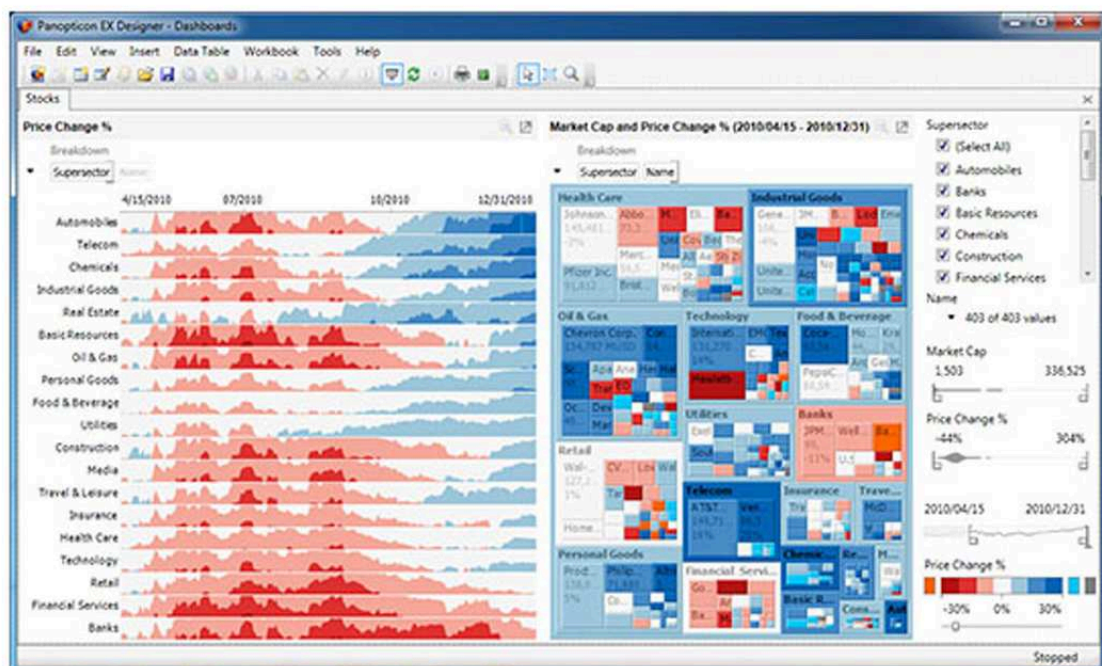
Panopticon Rising

I've written in the past about the fine data visualization products of Panopticon—one of the few commercial software vendors that understands data visualization. Having not seen the latest releases of their products for a while, I recently contacted the folks at Panopticon to request a product briefing. In addition to learning about the latest features during the briefing, I discovered that Panopticon experienced a tough couple of years since I'd talked with them last, which was a direct result of the recent financial meltdown. Unfortunately, most of Panopticon's customers were financial corporations, so the meltdown hit them especially hard. I mention this only to help you fully appreciate what they've managed to accomplish in the last two years, despite a reduced workforce.

In its early years, Panopticon specialized exclusively in treemap visualizations—beautifully designed and comprehensively functional—which could be updated using real-time streaming data. When I looked at their products a little over two years ago, they had expanded their repertoire of visualizations to include line graphs, bar graphs, and an innovative way to compare a large number of time series on a single screen by merging line graphs and heat maps to form a new visualization called the *horizon graph*. I wrote about the horizon graph back in June of 2008 in a newsletter article titled "[Time On the Horizon](#)."

During the past two years they've added almost every other type of visualization to their library that's typically useful for quantitative analysis and performance monitoring, including my bullet graphs and Tufte's sparklines. Many charts can be combined on a single screen with exceptional layout flexibility, and they can all work together, for instance, through the use of dynamic filters that affect all charts simultaneously. And finally, they've added the ability to display small multiples in the form of visual crosstabs. The result is a fine data visualization toolset for building powerful analytical applications and performance monitoring dashboards, developed by a lean team of talented designers and developers who have their priorities straight, rooted firmly in best practices. The toolset still lacks areas of functionality that would be useful, but its moving in the right direction at a rapid pace.

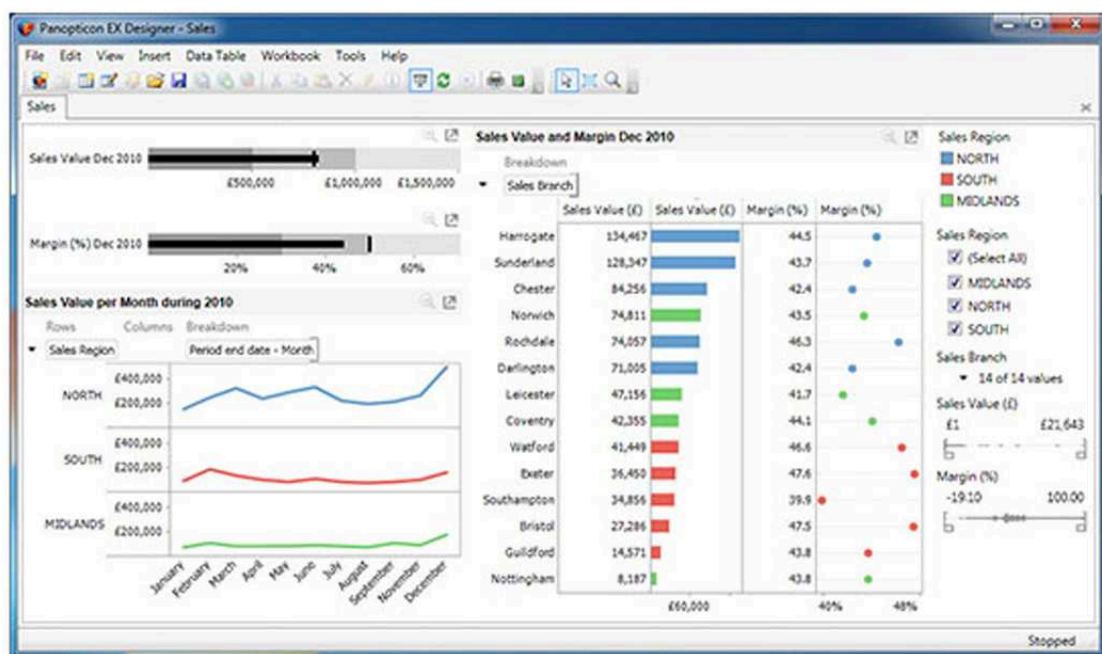
The following example combines a treemap in the middle, which displays market cap and price change information for a large set of stocks by sector, with a horizon graph on the left, which displays nine months worth of daily price change values per sector. Filter controls appear on the right for sectors (a categorical variable filtered using check boxes), market cap and price change percentage (two quantitative variables filtered using slider controls), and date (filtered using a date slider control).



[Click to enlarge.](#)

Notice that the slider controls themselves provide information. The quantitative filter controls displays something that looks a bit like a histogram along the scale to show the frequency distribution of values in the data set, and the date filter control includes a sparkline to provide a simple view of how stock price changes went up and down through time.

This next example combines bullet graphs, line graphs, a bar graph, and a dot plot to display sales information by region:



[Click to enlarge.](#)

Panopticon's products are not designed for exploratory data analysis. Business users wouldn't explore data with them in an open-ended manner without some up-front development work done first by someone who has developed some skill in using the tool. The creation and layout of visualizations on the screen requires too much interaction with dialog boxes—each filled with many choices—to support the fast and fluid interaction with data that's needed for exploratory data analysis. Instead, these products are primarily designed as toolsets that developers can easily learn to use for building specialized reporting systems, performance monitoring dashboards, and custom analytical applications. (If you're unclear about the distinction between exploratory data analysis tools and custom analytical applications, I wrote an article in October of 2009, titled "[Fundamental Differences in Analytical Tools](#)" that explained the differences and how each would be used.)

Panopticon's products don't do everything, but what they do, they do well, as I hope you can see.

Take care,

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