

Visualize Attribution, Risk, Returns, and Other Related Performance Data Aggregated from Multiple Databases



Panopticon's Portfolio Attribution & Risk Solution is an advanced visualization that allows managers to view aggregated risk and performance data from all funds under management right down to the constituent level of a single portfolio.

This solution may be implemented using Panopticon's Explorer Desktop product, the Enterprise web-deployed solution, or embedded in another system using the company's Developer SDK. Enterprise and Developer are both available in .NET and Java versions.

Buy-side organizations struggle to cope with data that moves throughout the market at increasingly high speeds. The cost of making bad decisions is very high and this places even more demands on managers who are responsible for performance.

Traditional reports cannot keep up with a market that's changing on a second-to-second basis. CIOs need to see how their funds are performing, and more importantly, understand why their funds are performing as they are. They must be able to look at performance by region, country, office, and fund manager — as well as by sector, industry and even by specific instrument.

By the time a manager has read a report and tried to make sense of the data, market trends may have changed completely. CIOs and Portfolio Managers need an effective way to monitor the risk profiles and returns for the market and their portfolios.

Panopticon's Portfolio Attribution & Risk Solution supports collaboration within organizations as well as presentation of complex performance and risk data in intuitive ways. The software's flexibility and ability to handle large amounts of data from multiple databases make it a great fit for managing complex funds that hold a variety of instruments.

The solution allows users to understand precisely the drivers of performance and risk — much faster than is possible with traditional methods — and enables business users to take immediate action on important findings.

This paper looks at a specific use case for Panopticon Visual Business Intelligence software: Portfolio Risk & Attribution.

Advanced Visualizations combined with Panopticon's StreamCube™ technology provide a perfect way to view fund information

Treemaps and Stack Graphs are particularly well-suited for visualizing the types of information that CIOs and fund managers need to see when evaluating the performance of their portfolios. They are very flexible and easy to understand — and they allow users to filter out less interesting data to focus on important outliers, or “slice and dice” the data to look at the same information from many different perspectives.

Panopticon's visualizations go well beyond the capabilities of other systems on the market, since the visualizations themselves are only the tip of the iceberg. Panopticon's software is a complete Visual Business Intelligence platform developed in response to the particular challenges of managing financial data. The system incorporates our StreamCube™ technology and our high performance in-memory data model. This supports access to data

from multiple sources (relational databases, proprietary systems, OLAP-servers, and even streaming data feeds).

Our StreamCube™ data model provides the fast analysis, aggregation and calculation functions needed to make Treemaps truly useful in a financial services environment. The Panopticon data model allows for continuous updates — it is specifically designed to handle **true real-time streaming updates** with very high levels of performance. It supports fast analysis, re-grouping and filtering since the system does not require a rebuild of the entire OLAP cube every time the data changes. When events in the data stream occur, or when the user interface interactively queries the data, the data model performs the calculations necessary to display the information on the fly.

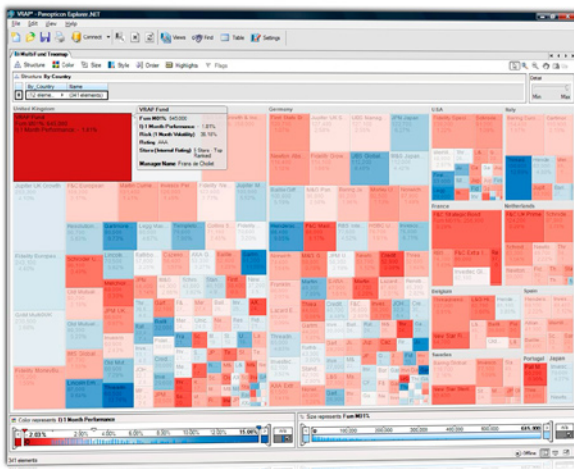
Visualize return, risk exposures, contribution and attribution

Panopticon's Portfolio Attribution & Risk Solution lets you see all details of a portfolio in a single view and easily switch to view additional portfolios. You can drill all the way down to see details about the underlying instruments or aggregate up to the level you're most interested in. Analyze portfolio relative contributions, filter out constituents that do not merit attention and bring up complete details on those that do.

You can see data aggregated from several funds – by asset class, by model, by region, by team, by fund manager, for example. You know how tedious and time-consuming this sort of analysis can be using conventional tools like the spreadsheets, tables and standard reports that come with most performance and risk applications.

You can export views for inclusion in presentations and reports with a few clicks. You can also email interactive visualizations to your colleagues with notes highlighting important results; this allows the receiver to analyze your comments using the system's intuitive, interactive tools.

Panopticon's interactive graphical interface clearly shows underlying performance and risk in a single view. You can see all information on performance, attribution, contribution, tracking error and risk sensitivity. The software helps asset managers see their results and develop more useful reports for internal use and to external clients and investors. It's a quick and easy method to see over and under-performances within multiple or single funds. Managers easily get comprehensive views of their portfolios.



This is a Treemap of a fund universe. It displays hundreds of funds grouped by country; the poor performers are highlighted in red. From this screen, the user can drill down to see the constituents of each fund in order to investigate further.

Compare individual instruments and see how they affect the performance of your funds

Panopticon software lets you look at the stocks you hold in a portfolio and compare it to the stocks you decided against. You can then look to see which stock selections you made that have turned out to be good decisions and compare your results to the benchmark.

“By integrating the products with real-time data the firm can react in minutes. Given the current state of the market, it is a competitive advantage”

Dirk-Emma Baestaens
 Manager in the Cross-Assets Derivatives & Structured Products Division
 Fortis

Our unique grouping features let you look at the highest performing stocks in the whole universe of available instruments. See how including them in your funds would have affected the risk and performance parameters of your fund compared to the relevant indices.

You can group your instruments in any way you wish — by stock decile, yield, country, fund manager, analysts' ratings, and so on.

You can see many different criteria simultaneously by using groupings, breakdowns, color parameters, and filters.

Our handy popup box lets you pull in additional fields and data from another data source to see as much detail as you need. You can also pass parameters about an instrument to other systems for additional analysis.

These multi-dimensional capabilities let you explore and discover the useful nuggets of information that can help you make better decisions and improve fund performance.



This multiple visualization view shows the performance of a fund across time. The Treemap and Scatter Plot highlight overall sector performance and correlations. The Stack Graph shows the performance every day across the year. From this screen, the user can drill into a sector to see the constituent stocks and their relative performance across time.

“Panopticon is exactly the solution we have been looking for. We now have a powerful yet easy-to-use visualization solution, giving us a quick overview of the whole portfolio. This is the only visualization solution we've seen with that sort of capability”

Keith Ho
Head of Portfolio Management
Barclays Capital

Improve the quality of your reports to senior management and external clients

It is quite difficult to get at the most interesting and useful risk and performance information using the large and complex reports typically available in asset management firms.

Panopticon's visualizations use color, size and grouping to draw your attention to the most important information in the data — and you can quickly review your data on-demand and see information on any time basis that you have calculated.

Use your insights to develop presentations and reports that draw the attention of senior managers and investors to the most important information. Remove noise and focus on the most critical opportunities and problems.

Aggregate and run calculations on data from multiple sources

Panopticon allows managers to view data based on information from many separate databases. For example, you may store ratings information from your analysts in one database, performance data in another, holding information in yet another, and so on. The software is designed so that it can easily connect to multiple data sources and create visualizations that utilize data from some or all of those sources. The solution can also handle complex calculations and aggregations of data from multiple sources.

See risk and performance information at the same time

Panopticon's visualizations let you assign colors to the risk measures determined by your internal models. You can assign performance measures to the size parameter in the visualization and then group your instruments by fund, by sector, by country, by fund manager, or any other attribute that makes sense to you.

You can very easily see how a change in position for a particular asset will affect the total risk of a fund. You can identify many possible selections in a very short period of time to see which instruments could have an effect on a portfolio's risk. For example, you can visualize potential effects on tracking error by easily viewing the results of the covariance matrix.

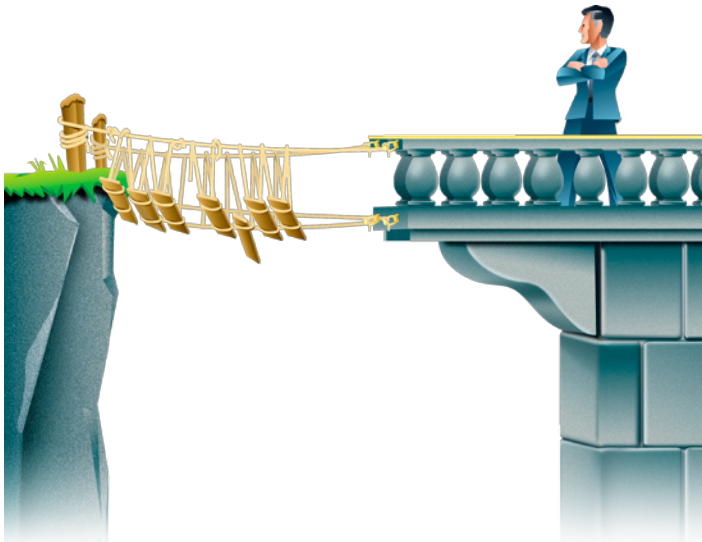


Low Risk Strategy: Fast Implementation Using Comprehensive SDK

Panopticon's comprehensive SDK makes it easy to embed interactive visualizations into existing applications to enhance their usability and effectiveness. These visualizations are a great fit with Order Management Systems, Portfolio & Position Systems and Tick Engines. Adding Panopticon visualizations to legacy applications can greatly improve utilization by making the applications easier and more fun to use — as well as reducing training time and improving productivity.

Panopticon software requires no additional middleware and is available for either .NET or Java environments. Implementation cycles vary from a few days to a few weeks. Embedding our visualizations in your existing applications using our SDK usually takes less than a month.

Our customers have proven that it's substantially faster and cheaper to implement Panopticon's interactive visualizations than it is to develop proprietary one-off solutions. You get a solid, robust package incorporating over 40 man-years of development — plus the results of our on-going R&D efforts — in an implementation that is completely unique to your organization.



Implementing Panopticon's interactive visualizations carries substantially less risk than developing proprietary one-off solutions.

Panopticon Software

Panopticon's Visual Business Intelligence technology and products help financial institutions, retailers, telecoms companies, and other organizations dramatically increase the value of their process support systems. Our software provides monitoring and analytical functions that help users make timely, insightful and informed decisions. The Panopticon VBI platform combines innovations in three areas:

- World class, academically validated information visualizations
- Business Intelligence capabilities
- Ability to connect to virtually any data source, including streaming feeds, relational databases, OLAP servers, and proprietary data formats

The Panopticon VBI platform is available as an SDK that enables software companies and corporations to embed these capabilities into their own applications. Panopticon also offers enterprise and desktop versions of its VBI tools that companies can deploy quickly.

We work closely with OEM partners who use our information visualization tools to make their applications easier to sell based on improved usability. They also use our friendly user interface to clearly differentiate their products from their competitors. Our partners include **Tbricks** (algorithmic trading platforms), **Deltek** (project management), **Polystar** (telecommunications), **Thomson Reuters** (financial services), **Advent Software** (enterprise software for financial institutions).

More Information

For more information about how you can embed Panopticon Visual Business Intelligence tools into your own applications, contact:

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“We selected Panopticon after a careful evaluation of the market for visualization technology. The final decision was based on Panopticon's record of success with SDK-based implementations at leading financial institutions and the results of a technology workshop we completed with the Panopticon

people”

Todd Gottula
Vice President, Product Development, Client Services,
and Support and Co-Head of Global Accounts
Advent Software

Panopticon software is available in Microsoft .NET and Java implementations.



“We looked at ease of use, scalability, integration, platform flexibility and the ability to process data in real time and Panopticon was superior to all others.”

Paul Doody
Global Head of Sales and Trading products
Thomson Reuters

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Application Note: Portfolio Attribution & Risk

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