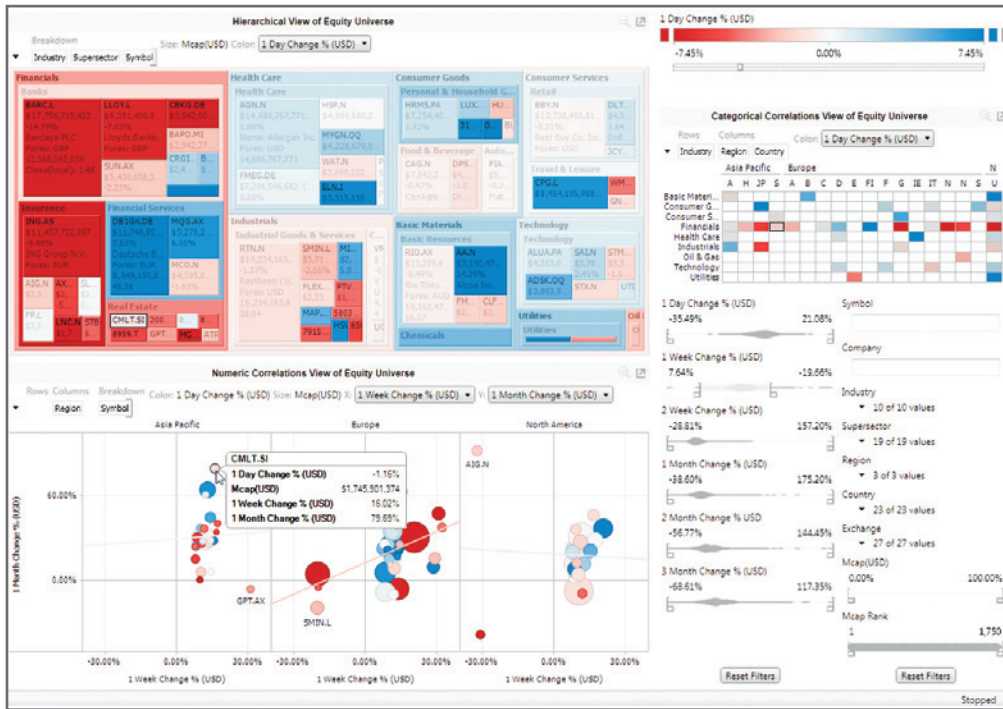


## Data Visualization Software for any Data Source – including Real-Time Message Bus and CEP Engine Streams



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

— Paul Doodley  
Global Head of Sales  
and Trading Products  
Thomson Reuters

### Rich Functionality. Robust Analytical Capabilities. Intuitive Interface.

Panopticon EX is a complete self-contained solution that allows business users to build and publish sophisticated real-time analytical dashboards in minutes. It is designed for fast deployment throughout the enterprise, at the workgroup level or even on public websites.

Panopticon EX offers visual monitoring and analytical capabilities to support a wide range of real-time, static and historic time series data analysis requirements. The true strength of the EX platform is that it provides an effective monitoring and alert system for Key Performance Indicators (KPI), minimizes the data latency found in traditional BI systems, and minimizes analysis shortfalls using pre-attentive data visualization techniques combined with in-memory OLAP cubes.

The software incorporates a wide range of information visualizations, including our well-known Treemaps and Heatmaps as well as Horizon Graphs, and a range of traditional visualizations designed for fast comprehension and interpretation. The software includes our fast StreamCube™ in-memory OLAP data model for on-the-fly data aggregations and slicing and dicing. Playing through a financial time series or aggregating performance across portfolio hierarchies is simple.

### OLAP-Enabled Monitoring & Analysis of Real-Time Data

Panopticon is completely unique in its ability to handle true real-time streaming data feeds from real-time message buses as well as data streams generated by Complex Event Processing (CEP) engines.

Our ability to handle real-time streams is one of the reasons the world's largest banks, brokers, fund managers, and telecoms utilities, use our tools to improve decision-making, reporting, monitoring, and analysis capabilities.

### Desktop Authoring Combined with Web Deployment

EX includes a desktop authoring tool that allows power users to assemble and publish new monitoring and analysis dashboards to the web. The system includes EX Server software capable of serving very large numbers of users. It provides a rich, full featured user experience to web clients. The system is often implemented to enhance the usability and effectiveness of traditional Business Intelligence and reporting systems.

## Fast Dashboard Development and One Click Publishing

EX is a sophisticated visual data analysis platform that is easy to deploy and use. Setting up your view for data analysis or activity monitoring is a simple drag-and-drop process. Designing new dashboards is quick, easy and fun with our “what you see is what you get” user interface. Publish to the web in seconds with our “one click publishing” function.

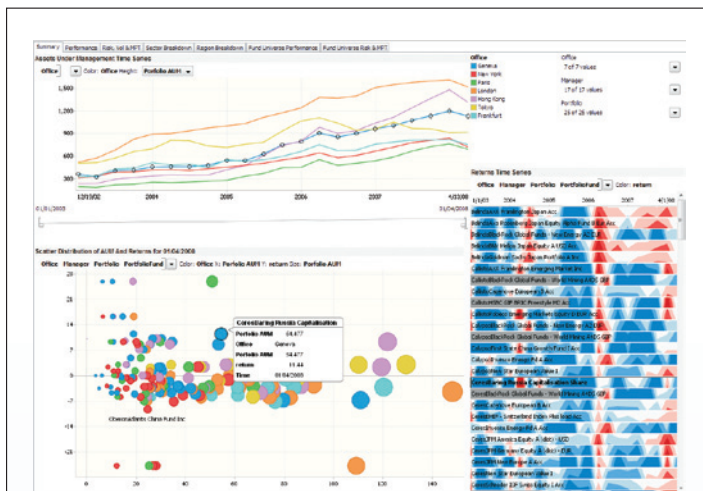
Panopticon EX allows you to federate several data tables from completely different databases and systems, which in turn lets you view combined data from those separate sources in one data set, and still have data updates delivered seamlessly to your output displays, whether desktop or web deployed.

EX fits into any work environment. Individuals who understand their data are the best people who author and publish dashboards for onward distribution within your organization or even for public websites. The EX Designer component can also serve as a completely standalone operational intelligence system that provides power users with a comprehensive system on their desktops.

## Intelligently Designed Visualizations

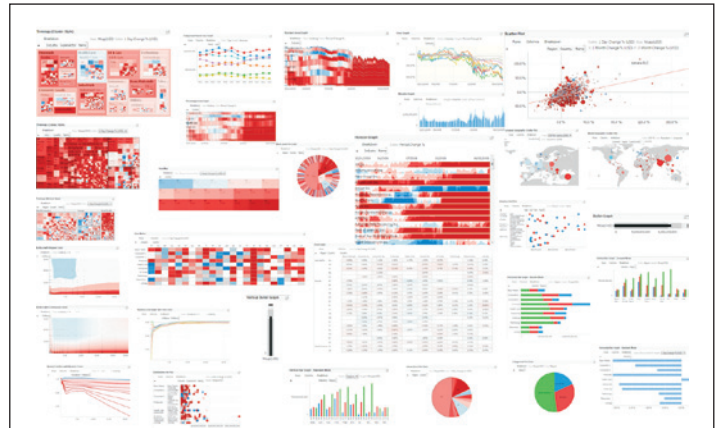
Building new dashboards is a simple drag-and-drop process with our intuitive “what you see is what you get” user interface. Dashboard designers can experiment with many different layouts and data management functions and select the most useful ones for integration into your custom application.

We take great care in designing our visualizations for extremely fast comprehension. You won't find 3D pie charts, superfluous animation and other “chart junk” in Panopticon EX. Everything is designed to make it as easy as possible to identify problems, opportunities, outliers, trends and patterns as quickly as possible — without unnecessary distractions.



## Deploy and Publish your First Dashboards in Hours

EX supports the shortest deployment cycle possible in such a sophisticated system; users report that they are able to go from installation to publication of their first useful dashboard in a few hours. This simple deployment process means that you can focus on business process analysis rather than technology adoption issues during implementation.



## Visualizations in Panopticon EX

Although we are best known for our Treemaps, Panopticon EX includes a vast range of visualizations including:

- Bar Graph  
(Horizontal, Vertical, Netted, Grouped & Stacked)
- Barseries
- Bullet graph  
(Horizontal & Vertical)
- Candlestick graph
- Dot Plot (Horizontal & Vertical)
- Heat Map
- Heat Matrix
- Horizon Graph
- Line Graph
- Needle Graph
- Numeric Line Graph
- OHLC Graph
- Percentage Area Graph
- Pie Chart
- Pivot Table
- Scatter Plot
- Sparklines
- Spread Graph
- Stack Graph
- Surface Plot
- Tile
- Treemap  
(Classic, Window & Cluster)

“After a thorough evaluation of the marketplace, we opted for Panopticon's visualization solutions based upon their performance numbers and their universal accessibility from different technology platforms.”

— Jerome Downey  
Senior Managing Director  
JP Morgan Chase

### Time Series Analysis — Continuous and Categorical

Panopticon EX supports analysis of historical time series data in two ways:

- Design time in hierarchical categories (Year, Quarter, Month, Day, and so on). This is the approach commonly found in most Business Intelligence systems.
- The second method supports continuous time series such as those commonly found within financial services and telecommunications applications. Here we support time windowing, time window calculations and time period calculations like moving averages. Panopticon EX also allows users to play through a series in an animated sequence using all data in a selected time range or using manually selected data sets from any of the hundreds of available time snapshots.

Both approaches support our dynamic hierarchies and aggregation calculations.

### StreamCube™ OLAP In-Memory Data Model: Designed for Speed

Panopticon EX incorporates our unique StreamCube™ OLAP data model. This provides rich in-memory OLAP functionality for fast analysis for static, streaming and time series data sets. It binds aspects of the data to the visualizations, filters and user controls presented on the screen. It allows users to move up and down within the data hierarchy easily, and filter, slice and dice the data quickly using the fast in-memory data model.

The StreamCube™ makes it possible for us to link the visualizations in a Panopticon EX Workbook. This lets you apply screening criteria that affect several data visualizations simultaneously. If you select a single data point in one visualization, you can see it highlighted in the other visualizations on the screen. This makes it much easier to identify outliers and to see how one data point compares to others using several different perspectives at the same time.

Our visualizations are not static pictures, but are instead designed from first principles to work with real-time streaming data. The real value of the visualization is quickly apparent when you interact with the data. You can zoom, filter and view details on demand, as well as link to and highlight other sources of information. For example, fund managers can link to a trading system directly from within the dashboard.

### Connect to Real-Time Streaming Data Sources

The idea of “real-time” can be very confusing, since virtually all software companies that provide visual analysis tools say they can handle “real-time”. However, what most of them mean is that their software goes out and requests an update from an external data warehouse, which itself may be updated once per day, when the data is needed. This itself can take several minutes.

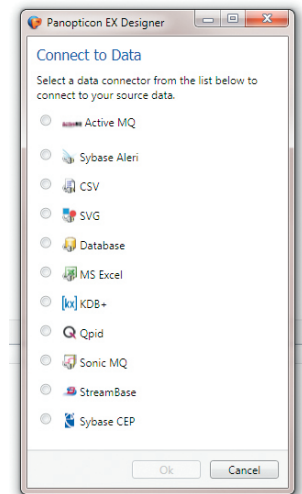
What we mean by “streaming real-time” is that data is constantly being pushed into our system and therefore into the dashboard by an external source – not at a regular interval, but instantly, as-it-happens and on a tick-by-tick basis.

### Wide Selection of Native Data Connectors

EX incorporates a number of native data connectors and can be modified to add additional connectors very quickly.

The standard product includes connectors for:

- Databases, including Sybase IQ and ASE, Kx kdb+, Oracle, DB2, Kognitio, and SQL Server
- Real-time streaming feeds, including ActiveMQ, Qpid, and SonicMQ
- Sybase and Streambase CEP engines
- Flat files, including Microsoft Excel, CSV and SVG files



### Connect to CEP Engines

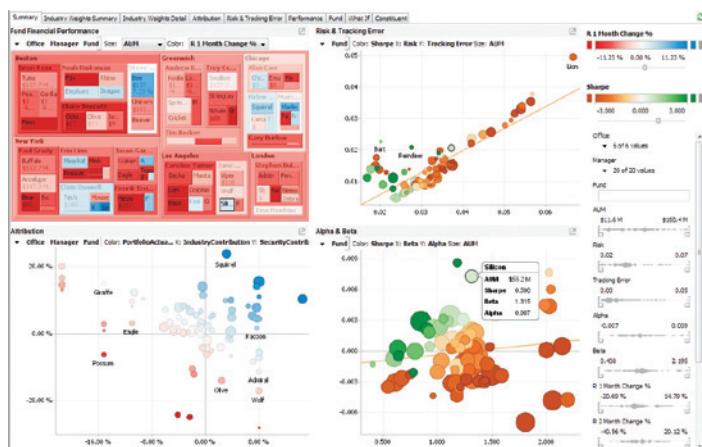
Complex Event Processing (CEP) is an emerging technology for building and managing information systems including:

- Market Liquidity Analysis
- Real Time Risk Management
- Algorithmic Trading
- Basket Trading
- Energy Trading
- Network Performance Analysis
- Real-Time Conformance to Regulations and Policies

Panopticon EX can use CEP data and allows you to truly see clearly the data being produced by your CEP engine, by providing visual analysis capabilities on both the streaming real time data, plus the historical records, typically output to column-oriented data repositories like Sybase IQ or Kx kdb+.

“ We made a thorough survey of our alternatives and selected Panopticon due to its very intuitive display of data and the ease of integration. ”

— Jerome Tordo  
Founding Partner & Managing Director  
Sycomore Asset Management



## Visual Alerts Notify You in Real-Time on an Exception Basis

You can screen on any part of the data with visual alerts that are triggered when a specific set of conditions is fulfilled. Other visual alerts indicate when and where there is an update in the data. The visual alerts are extremely powerful. For example, if you are monitoring trade activities or exposure risks, they will let you know instantly when certain trouble conditions are present so that you can take immediate action.

Our highly interactive software lets you explore and visually analyze huge amounts of real-time data with simple drag and drop operations. Start with the big picture and explore interesting aspects of your data in further detail. Interactively filter and get rid of irrelevant data. Navigate through your data using simple mouse operations. Save your favorite views and share your findings with your colleagues and customers.

## Scalability, Speed and Ease-of-Use

Panopticon EX software is highly scalable, easy to administer and requires minimal on-going IT support. You can install in minutes and be developing Workbooks in just a few hours. The system can handle the most complex data sources — including databases that are constantly being updated. Users love how easy it is to use; you can measure the training cycle for most admins and users in minutes.

Panopticon has invested substantial time and development resources in making sure that Panopticon EX is simple for even non-technical users to learn. The software is designed to be incredibly intuitive but still provide your users with the ability to handle large, complex databases and find outliers that help your organization prosper. As a result, the training focus isn't the technology or tools, but the business data being analyzed.

## Data Federation

Getting the numbers right is critical in any information visualization application. Our software supports dynamic calculations using combinations of live data from real-time streaming sources like message queues or CEP engines and historical databases. The software handles multiple data sources too; you aren't limited to a single database to combine with your real-time feeds.

The system applies your calculations and formulas to incoming data on-the-fly and presents the results visually in real time. For example, you can easily federate data in an Excel spreadsheet with live real-time stock exchange data from a market data feed and program calculations using Excel-like formulas. Then you can see and interactively analyze the results using our interactive information visualization tools.

## Speed Matters

Simple chart libraries cannot support calculations using real-time data. Data aggregation mechanisms that work in real-time require sophisticated programming techniques that must be carefully implemented. The design of our software guarantees calculation performance so that overall system performance is not affected as real-time data streams into the system. It allows users to work with real-time data feeds that may be changing hundreds of times per second.

## Panopticon Software

Companies all over the world use Panopticon software to help them make insightful, informed and profitable decisions. Panopticon's data visualization software together with its Real-Time Business Intelligence capabilities helps them understand correlations, identify outliers and see trends that are obscured in traditional reports.

Panopticon's clients use the company's data visualization software tools to speed up their business processes, reduce operational and investment risks, detect anomalies (including fraud), and identify opportunities to increase profits and sales. They help people see hidden patterns or spot problems in addition to helping them identify useful opportunities in their data.

### Panopticon's platform excels in:

- Transforming data into intuitive academically validated graphical displays that are easy to understand and use.
- Enabling monitoring and analysis of multi-dimensional data with our fast, in-memory OLAP data model.
- Connecting to virtually any data source, including real-time streaming feeds, message buses, the output of Complex Event Processing (CEP) engines, relational databases, and proprietary data formats.

The Panopticon platform is available as an SDK that enables software companies and corporations to embed these capabilities into their own applications and in our Panopticon EX product designed for fast deployment at the enterprise, workgroup or desktop levels. We also offer our unique Rapid Development Kit; the RDK combines the ease-of-use available in EX with the integration capabilities of the Developer SDK.

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