Using Visual Numerics software to assist in its data-mining, GFTA distills information from gigabytes of historic data combined with live tick data to give treasuries and traders predictions on what is about to happen to exchange rates.

Quick Facts

GFTA (Gesellschaft fuer Trendanalysen) is in the data mining business and acts as an independent supplier of decision support information. GFTA gives treasuries and traders predictions on what is about to happen to exchange rates. This work is accomplished by using both IMSL and PV-WAVE. Math and Stat models are written in C and C++ using the IMSL Libraries and PV-WAVE is used to analyze the tabular data output by the models.

The Problem

GFTA (Gesellschaft Fuer Trendanalysen) is an independent supplier of decision support information to leading players in the Forex market. Using Visual Numerics software to assist in its data-mining, GFTA distills information from gigabytes of historic data combined with live tick data to give treasuries and traders predictions on what is about to happen to exchange rates.

GFTA is so successful in its predictions that it works on a profit participation basis only, so it only makes money if its customers do. Its customers are also free to cancel the service immediately at any time.

GFTA will not disclose the actual names of its customers, but they include the treasury departments of several countries, major merchant banks, pension fund management companies and multinational corporations.
The steps in the process are to:

- Collect, clean and store the data
- Construct irregular step Time Series Models
- Construct a portfolio of models for each market
- Monitor the validity of each model and portfolio
- Use the models to provide traders with a simple buy/sell recommendation

I THE SOLUTION I

Data Collection

The raw materials for GFTA are the masses of data from the world’s financial markets. When GFTA was formed in the mid-seventies, it began the painstaking exercise of archiving data from the world currency markets. These data were often in the form of daily or even weekly information on exchange rates. The frequency of change in exchange rates has increased enormously, and now GFTA is adding several megabytes of market information per day. Building an unrivaled resource of data, GFTA is set to dominate this market for many years to come.

The only data that GFTA is interested in for its decision support are the exchange rate and, sometimes, the volumes traded. This is because it finds that all other factors that may affect the market rates are reflected in these two parameters. It then uses these time series data to model the markets.

Data Modeling

The multidiscipline teams at GFTA develop mathematical and statistical models to analyze the trends in each market. These models are written in C and C++ using the IMSL Mathematical and Statistical Libraries on Silicon Graphics, Inc.® servers that run the models every few minutes and send the results to GFTA's desktop systems.

There is no fixed data model that fits the market exactly. GFTA uses a diverse collection of methods and switches between models. By using this combination of technologies, GFTA provides a better than chance prediction of the trends in the markets.
Data Validation

GFTA uses PV-WAVE on its desktop machines to analyze the tabular data output by the models, which produce several views of the data ranging from simple line charts using color to indicate the action recommended to detailed temperature plots showing blue where the model is behaving well, ranging to red when the performance is poor. The mathematical and statistical functionality of PV-WAVE helps provide numerical analysis of this output.

I RETURN ON INVESTMENT I

The information GFTA has gathered is distilled into a simple number that is fed to the client’s trading organization — the amount of the currency that is to be bought (or sold) — thereby providing traders with a competitive and comparative advantage in the marketplace and allowing them to make better decisions. Because GFTA stays close to the pulse of the market and the computer programs have better memory and better stamina than a human, GFTA’s clients win more deals than they lose.

I WORLD CLASS PRODUCTS, SERVICES, AND SUPPORT I

For over 30 years, Visual Numerics, with its PV-WAVE and IMSL product families, has provided trusted visualization and numerical analysis tools to thousands of technical professionals in a broad range of industries around the world. Scientists, researchers, educators, engineers, developers, Intranet managers, testers and analysts use Visual Numerics’ development tools to solve problems, identify trends and share results.

The PV-WAVE Family has all of the functionality you need in one tool, including an open software environment allowing for integration with new technologies, and the IMSL Library which delivers over 370 mathematical and statistical routines, creating the most powerful data analysis software available. The IMSL libraries can dramatically accelerate development by reducing programming time by up to 95%.

The PV-WAVE Family provides a broad range of easy to use, high performance solutions for any type of data challenge, while delivering significant return on investment through maximum productivity.

Visual Numerics partners with its customers to provide world-class products, services and support. We have unparalleled technical support that can answer the hard questions fast, and responsive consultants that can provide in-depth expertise and timely delivery of time-critical solutions.