MetrixND®

specifications
MetrixND® Energy Forecasting Tool

Overview

Itron's MetrixND is a flexible modeling tool, widely used by top energy forecasters at leading utilities and energy providers throughout the world. MetrixND gives users advanced modeling techniques to develop the accurate forecasts essential for making informed business decisions.
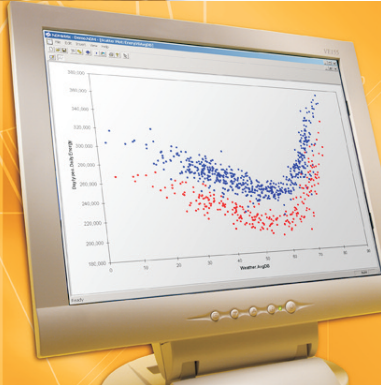
Designed to take advantage of advanced Windows capabilities, MetrixND's intuitive user interface and drag-and-drop architecture streamlines the development of forecasting variables and models. Evaluation graphs, diagnostic statistics and reports are readily available to assist in developing and analyzing forecasts. This interactive design strategy allows the forecast analyst to quickly evaluate alternative models and select the one that works best.

MetrixND techniques include:
> Exponential Smoothing
  − Ideal for projecting customer growth trends that support monthly sales and peak forecasting applications.
> ARIMA
  − For seasoned time series professionals who want to visualize how historical data patterns extend into the future.
> Regression
  − No other tool lets users build multivariate models faster
> Neural Networks
  − Essential for short-term forecasting where modeling the nonlinear response between loads and weather matters most.

MetrixND forecasting applications
> Monthly sales and revenue
> Long-term energy demand
> Short-term hourly and sub-hourly loads
> Retail load schedules
> Model-based load profiles
> Daily or hourly gas send-out
> Market price
> Point-of-delivery loads
> Individual customer loads

MetrixND capabilities

> Integrate with Existing Data Sources
>> – MetrixND works with Excel spreadsheets and a variety of databases, including Access, MV-90, MV-STAR, ORACLE, and SQL Server.
> Data Frequencies
>> – Works with all data frequencies: sub-hourly, hourly, daily, weekly, monthly, quarterly, and annually.
> Graphical Analysis
>> – Provides the most meaningful diagnostics and powerful graphics capabilities at the click of a button, helping users see, understand and present forecasts.
> Variable Creation
>> – Creates analysis variables on the fly using spreadsheet-like formulas that enable different approaches and variables without the need to learn a programming language.
> Hourly Modeling
>> – Rapidly develops hourly or sub-hourly models calibrated automatically to forecasts for daily energy and peak demand.
> Model Comparisons
>> – Compares alternative model specifications to allow users to select among competing models quickly and efficiently.
> Simulations
>> – Enables monthly variance analysis by dragging-and-dropping alternative forecast drivers into the model to view the impact on the forecast.
> Time Series Residuals
>> – Provides a one-step process for including a time series model of the residuals to improve the overall forecast.
> Quantifying Forecast Uncertainty
>> – Constructs dynamic confidence bounds with the GARCH option in the regression and neural network models.
> Visual Basic for Applications Module
>> – Microsoft's VBA is integrated into MetrixND, which allows users to write powerful macros to build any MetrixND element, including models and modeling variables.
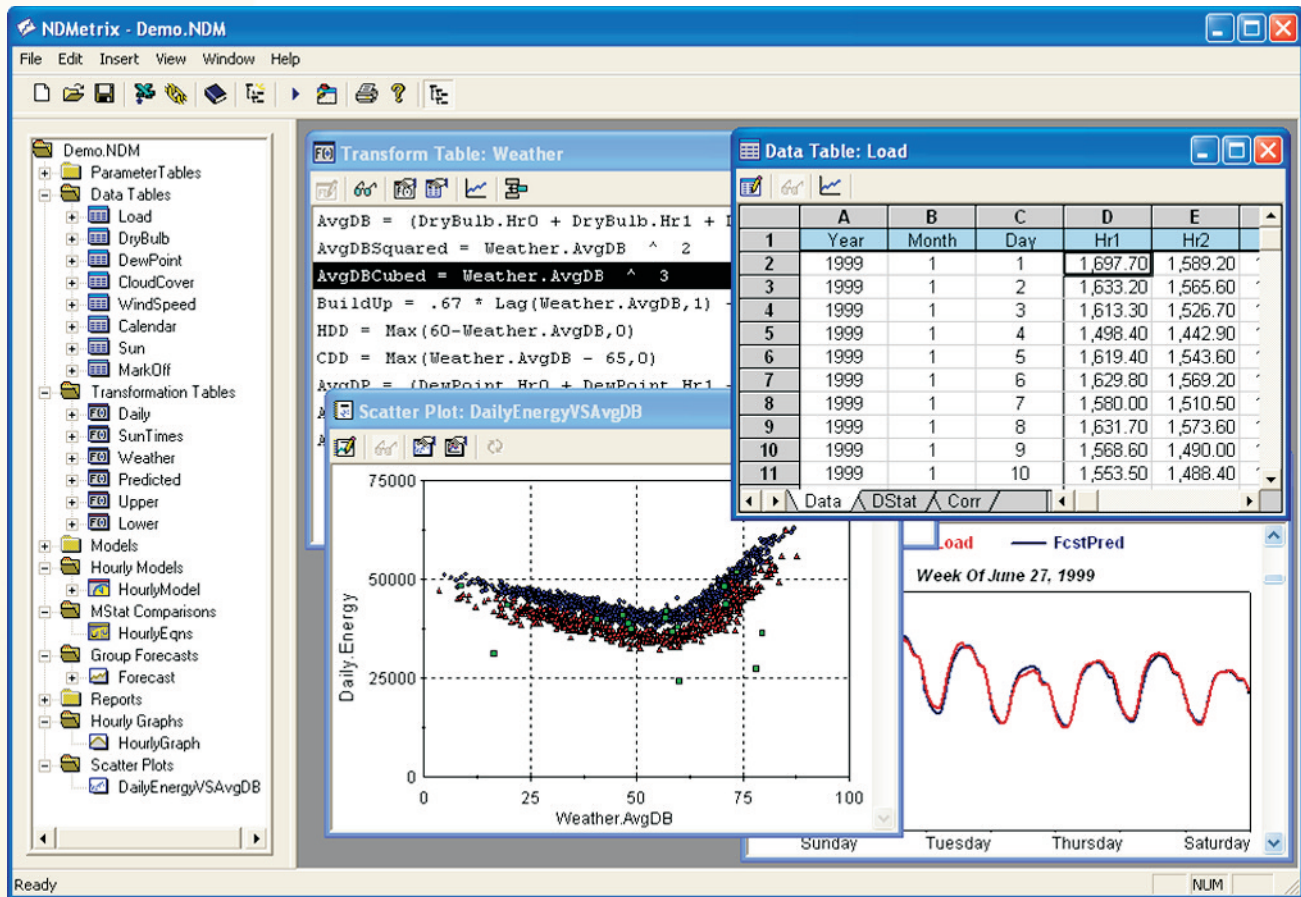
Neural network options

MetrixND builds custom neural network models quickly and efficiently to specify:

> The functional forms of the nodes in the hidden layer
> Custom variable lists for each node
> Inclusion of time series residuals
> Inclusion of GARCH residual variances
> Test periods for model evaluation
> Exclusion of bad spots in the data

Accelerated optimization

Uses fast optimization algorithms resulting in rapid training. As new data become available, continued model learning takes only a few seconds.

MetrixND user interface.

Applying MetrixND

Short- and long-term hourly forecasting applications
No other package provides the modeling power and flexibility that MetrixND delivers. Models are customized to optimism accuracy for each location. The MetrixND modeling system allows users to quickly and efficiently evaluate load data and weather relationships, and compare the relative accuracy and stability of alternative model specifications.

Financial forecasting
Financial forecast applications cover a range of topics, including customer, sales volume, peak, revenue, variance analysis, normalized sales and revenues. MetrixND helps users estimate forecast models, generate sector sales forecasts and calculate weather impacts. Results can be exported for generating forecast and variance analysis reports.

Retail and delivery point forecasting
MetrixND supports Itron's retail and delivery point systems with sub-hourly, hourly or daily forecasts. Forecasts are created for portfolios of retail customers or lists of delivery points, where a portfolio can change on a daily basis. For individual customers or delivery points, the system provides a set of templates that are assigned based on the properties of the load. This allows simple models to be used for calendar-driven loads, while more complex models are used for loads driven by weather, price or other factors.

A knowledgeable user community
More than 120 energy service providers use Itron's forecasting tools. Licensed users have access to industry experts in energy forecasting, a quarterly newsletter to update users on the latest forecasting techniques, and an annual meeting to bring together industry peers.

profile
Itron

Itron is a leading technology provider and critical source of knowledge to the global energy and water industries. More than 3,000 utilities worldwide rely on Itron technology to deliver the knowledge they require to optimize the delivery and use of energy and water. Itron delivers value to its clients by providing industry-leading solutions for electricity metering; meter data collection; energy information management; demand response; load forecasting, analysis and consulting services; distribution system design and optimization; web-based workforce automation; and enterprise and residential energy management.

To know more, start here: www.itron.com/global

Itron

México & Central America
Guillermo González Camarena 1600-2E
Santa Fe 01210, México, D.F.
México
Tel.: +52 55 5292 6240/44
Fax: +52 55 5292 6239
soporte.mxca@itron.com

Corporate Headquarters
2818 North Sullivan Road
Spokane Valley, Washington 99216
U.S.A.
Tel.: +1 509 924 9900
Fax: +1 509 891 3288
www.itron.com