TIBCO Spotfire for Utilities

CHALLENGES IN UTILITIES

Deregulation, volatile markets, aging infrastructure, and evolving consumer demands are increasing competition and driving new business challenges and opportunities in all areas of the utilities industry—generation, transmission, distribution, marketing, trading. In response, utility companies have had to dramatically shift their business models with an increased focus on efficiency of operations, reliability of service, demand forecasting, customer satisfaction, and regulatory compliance.

In addition, the implementation of smart meters has provided a bi-directional flow of data to and from the grid, supplying information on consumption volumes and timeframes. The resulting explosion of data provides new opportunities to derive detailed analytical information about consumption patterns, which can be applied in many different ways, such as for tailoring products based on usage, encouraging energy use during off-peak hours, forecasting and managing load more accurately, and detecting fraudulent use of electricity, gas, and water.

The changed business environment and use of the Internet for price and service comparisons has enabled consumers to easily switch utility providers, driving lower prices and more choices for consumers. These cost and competitive pressures have forced utility companies to become more efficient and innovative in how they manage customers, in the products they offer, and in the quality of customer service they provide. As utilities embrace the challenges and opportunities, they need to be prepared to manage vast amounts of diverse data that must be integrated, analyzed, and transformed into actionable and timely insight that can be shared with the rest of the organization.

WHY SPOTFIRE?

TIBCO Spotfire® helps organizations in the utilities industry develop valuable insights from large volumes of data, both structured and unstructured, historic and real-time. The outcomes of these insights can dramatically impact the bottom line as well as provide an early warning system for potential threats and opportunities.

TIBCO Spotfire enables business and technical users to apply the analytics needed in the time frame they require. They can perform pure ad-hoc analytics driven on-the-fly by their own knowledge, intuition, and desire to answer the next question.

Spotfire does this by letting users interactively query, visualize, aggregate, filter, and drill into datasets of virtually any size. They develop insight faster and bring clarity to business issues or opportunities that can be securely shared across an organization.
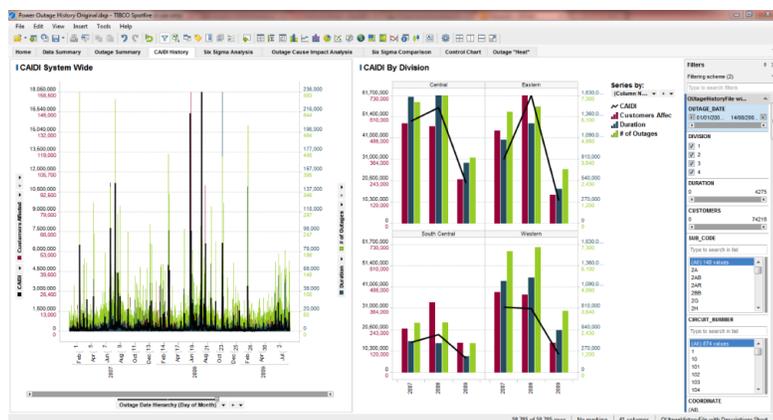
TIBCO Spotfire supports predictive and event-driven analytics, all from the same enterprise-ready platform. Predictive analytical capabilities allow you to leverage existing investments in R, S+, SAS, and MATLAB to support deep predictive insights through ad hoc analysis without requiring any statistical programming. This capability allows users to see trends, outliers, and anomalies and perform "what if" forecasting. Below are just some of the analyses that can be performed using TIBCO Spotfire:

- **Demand/Load Forecasting –** Spotfire provides the flexibility, data aggregation, and drill-down capability to more easily and thoroughly analyze a variety of data, including regional weather, demand profiles, and market trends to provide a fuller picture for load forecasting, generation requirements, and demand management.

- **Customer Management –** With Spotfire, you can quickly and easily analyze information and gain insight about customers, the products they use, the effectiveness of promotions, and the profitability of various offerings. Insights enable driving value to the customer by improving products and customer service in support of increased retention rates. Insights also enable attracting new customers, finding more profitable segments, analyzing different tariff programs, and improving profitability.

- **Asset Maintenance and Reliability –** Spotfire analysis allows users to bring textual inspection reports together with historical data, maintenance costs, and critical environmental conditions to evaluate and understand asset performance. Users can explore the relationships between the many factors and conditions that affect asset performance that could lead to potential failures. With this knowledge, they can develop predictive models, set thresholds, monitor streaming sensor data, and identify when asset performance begins to deviate from the norm, allowing corrective actions to be taken to prevent service interruptions and ensure cost-effective generation, transmission, distribution, and delivery.

- **Health, Safety, and the Environment (HSE) –** Spotfire can be used to analyze historical HSE incident data to identify trends and relationships between previous events and identify root causes. This knowledge can be used to develop preventive processes, implement training programs, and/or monitor equipment to avoid future incidents. In addition, Spotfire helps utilities evaluate data to understand the impact of using renewable energy sources and activities to comply with reduced carbon emission targets.

BEYOND UTILITIES

Spotfire is used extensively in the energy industry from upstream oil and gas refining and trading to downstream manufacturing, transportation, and marketing. TIBCO Spotfire helps energy professionals of all kinds improve decision-making and develop and share critical business insight.

Electricity Outage Analysis