

## Space-Time Market Composite



**Space-Time Awareness Suite:**  
 Industry's leading suite of geospatial analytics composite applications.

**Space-Time Market Composite:**

**Features:**

- Locational Marginal Pricing (LMP) Visual Analysis
- Visually locate generation and transmission schedules submitted day ahead or real time
- Wholesale and distribution price analytics by market forces
- Geospatial Demand Forecasting

**Benefits:**

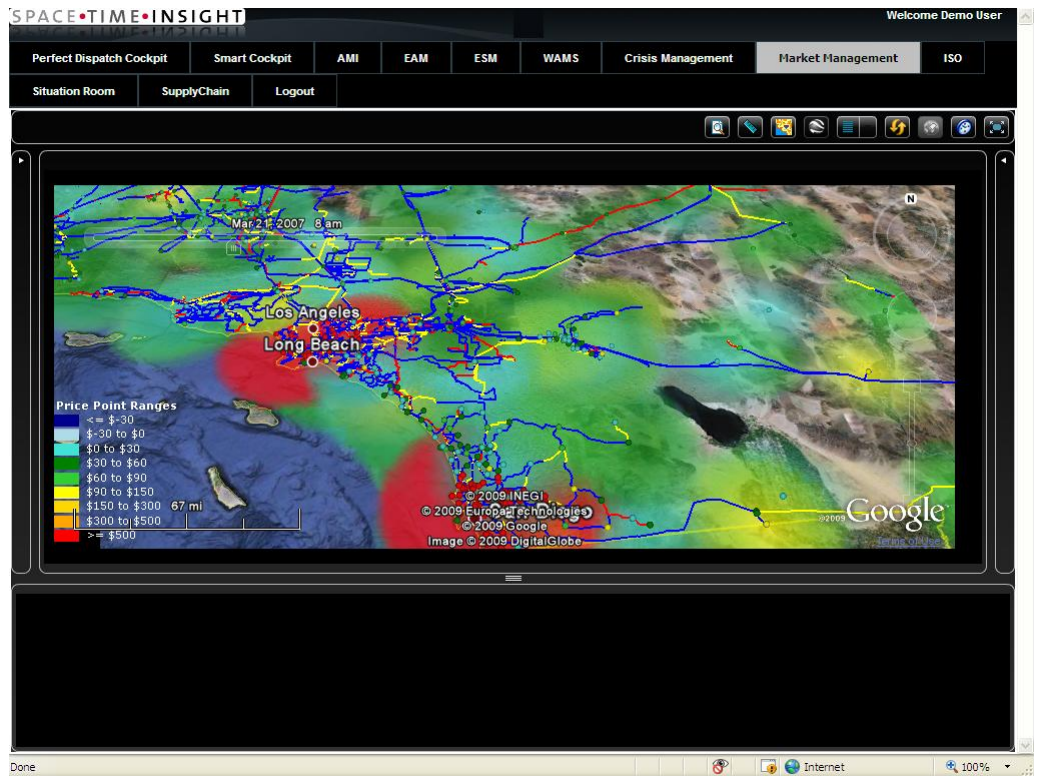
- Greater transparency of congestion hotspots and congestion costs
- Identify price points that are most economical
- Avoid grid congestion during peak demand
- Integrated view of multiple markets – forward and real-time
- Enhanced visibility and control of energy costs

**Customers Say:**

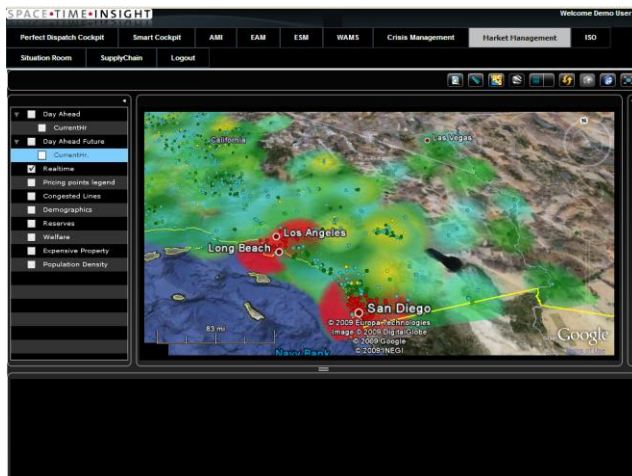
- "Space-Time Insight improves our overall ability to respond to, and even avert, potential system emergencies."

Without a greater visibility into demand signals, without proper demand forecasting tools, without knowing precisely when demand will peak or how high it will go, it is almost impossible to manage congestion on the grid.

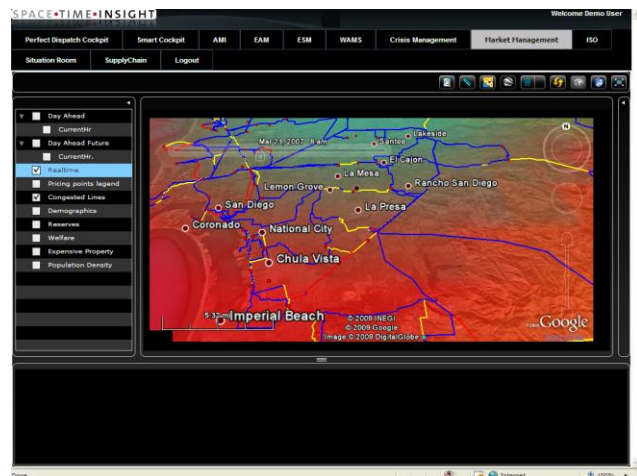
Effective congestion management on the transmission grid results in efficient pricing and market transactions. Delivering situational intelligence about energy price, demand, and supply in the context of grid congestion, Space-Time Market Composite helps independent system operators (ISOs) to bridge the gap between laws of physics and laws of economics to help improve the reliability of the electric grid and the efficiency of the electricity market thus providing advantageous pricing for electricity consumers.



Users view the Space-Time Market Composite screen to detect and analyze pricing anomalies and to aid in decision making for efficient grid management and balancing.



The dots shown in the screenshot represent the sub-stations with location marginal pricing (LMP). The pricing contour represents a general area of congestion. Red indicates a highly congested zone.



Red contour represents areas of high congestion. The transmission lines colored in red are congested. When congested transmission lines overlap with congested pricing zones, then the LMP algorithms are working as intended. If there is a mismatch between transmission lines and zones, that represents a pricing algorithm failure.

## Space-Time Market Composite – Key Features

- **Locational Marginal Pricing (LMP) Visual Analysis:** Intuitively, visually identify **congestion hot spots** and **price points** that are most economical to help avert **grid congestion** during **peak demand** and to facilitate **day-ahead** market transactions, making it easier for generators to identify opportunities to sell excess power at a competitive price
- **Visually locate** generation and transmission schedules submitted day ahead or real time
- Wholesale and distribution **price analytics** by market forces
- **Geospatial Demand Forecasting:** Visualize demand forecasts, to make real-time grid response a reality and help better manage congestion. Enable grid operators to control load in a way that minimizes the need for traditional peak capacity measures, which are not only expensive but also generate additional greenhouse gases

## Space-Time Market Composite – Customer Benefits

- Greater transparency of congestion hotspots and congestion costs
- Identify price points that are most economical
- Avoid grid congestion during peak demand
- Integrated view of multiple markets – forward and real-time
- Enhanced visibility and control of energy costs