

SUCCESS STORY



EMPOWERING AN ENERGY UTILITIES BUSINESS WITH ADVANCED ANALYTICS SOLUTIONS

PROJECT OVERVIEW

The platform primarily handles Weather forecast data, historical energy consumption data, and data from IoT sensors.

The client required an advanced analytics solution to make use of the data to generate insights that:

- Help their business forecast demand for Distribution Companies.
- Detect outliers for ill-performing wind turbine.

CLIENT DOMAIN

Energy & Utilities

SOLUTION DELIVERED

Advanced Analytics

KEY HIGHLIGHTS

- Reduced surplus and inventory costs by 5% for DISCOMS
- Preventive maintenance of turbines resulted in the reduction downtime losses by 5-6%

ABOUT CLIENT

The client develops, sells and services energy analytics software to renewable energy producers, OEMs, transmission and distribution utilities, and other energy companies.

BUSINESS REQUIREMENTS

Indium Software's approach focused on two use cases:

- Demand Forecasting
- Survival Analysis

Demand Forecasting Problem

- The data flux from the Weather reports, Energy Consumption and IoT Sensor data is of high frequencies and volumes.
- Using the data, create a model of High Accuracy and Less Variance forecasting values.

Survival Analysis Problem

- Use of data sources from Weather forecast reports, Wind Turbine sensor data from a large number of wind turbines.
- Predict failures in advance to leave enough device repair and maintenance time.

SOLUTION HIGHLIGHTS

Demand Forecasting Problem

- Indium Software implemented Generalized Additive Modelling to achieve high accuracy and less variance results.
- The high volume, high frequency data is handled using OpenTSdb.
- Used Non-parametric regression for more generalization, piecewise splines.
- Saved the Model in a PMML Object and use it for inflowing data to generate demand forecasting results.

Survival Analysis Problem

- Indium Software leveraged OpenTSdb to handle unbalanced data.
Used Survival Analysis which gives
- probability of failure in a given window of time.
- Used Isolation Forest and Advanced Outlier Detection methods.

BUSINESS IMPACT

Demand Forecasting Problem

The client was able to use the model to realize real-time business benefits.

- Reduced surplus and inventory costs by 5% for DISCOMS.
- With better inputs for financial, operational planning and budgeting, revenue management process became proactive and efficient.

Survival Analysis Problem

The client was able to use the model to realize real time business benefits.

- Energy grids get alerted and repair the turbines before they go out of the order. This projected a significant 5-6% cost savings in repair and maintenance.
- Enhanced Predictive Maintenance aided the client business to maximize revenue recovery, reducing sunk costs by 2-3%.

TECH STACK



ABOUT INDIUM

Indium is a Digital Engineering Services leader and Full Spectrum Integrator that helps customers embrace and navigate the Cloud-native world with Certainty. With deep expertise across Applications, Data & Analytics, AI, DevOps, Security and Digital Assurance we “Make technology work” and accelerate business value, while adding scale and velocity to customer’s digital journey on AWS.



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