

## Customer

A US based company that provides innovative products and solutions in the Industrial and Energy domain

## Problem Statement/Requirements

The customer has power generation and distribution solution based on IoT. The customer needed a cloud based data analytical solution which will utilize the data read from the power generation station and from power distribution IoT. The data analytics solution should help the customer analyze periodic data, understand the periodic trends – generation and usage, and predict future demand of power. SFO has designed and delivered a solution hosted in AWS on behalf of customer, which reads the IoT based data, stored in AWS and used for analytics and prediction and this has helped the customer boost their productivity.

## Solution Methodology

The solution has three major components:

1. **Data Acquisition:** This component will extract periodic data and instantaneous alerts from the IoT mesh network and persist in a local storage.
2. **Data migration:** This component will migrate the real time data to the AWS database service fault tolerantly.
3. **Data Analytics solution:** This software was hosted as a web service in the AWS cloud space provided by the customer. This component will utilize the acquired data intelligently and will infer useful information from them. The user interface is simple and intuitive.

The major services provided by this data analytics component include:

1. Real-time energy demand forecasting
2. Improve QoS with predictive modeling of grid performance
3. Smart meter data analytics to help customer know their energy usage pattern & reduce their consumption (eg. predict which customers are candidates for ToU tariff offerings)
4. Analyze customer energy usage for detecting theft or meter tampering
5. Customer churn analysis and retention methods Along with analytics solution, the software also provides the administrator a provision to monitor remotely and carry out actions required to upkeep of the power generation system thereby reducing need for field visits. There are provision for multiple levels of authorization to the system.

## Brief description of product:

### a) Software

- AWS, Java J2EE, Spring, Hibernate, Angular JS, Bootstrap, HTML5, Jasper Dynamic reporting, Highchart, Talend

### b) Compliance

- CMMI ML5
- ISO 9001 : 2015
- ISO 27001 : 2013

## Impact

- Quick to install
- Cloud based monitoring & control, virtually carry out most of important actions remotely, thereby eliminating need for expert man power locally which is very essential for rural region applications
- Analytical solutions, which will help the power supplier analyze the profit and keep up with the demand.

## About SFO

SFO Technologies Pvt Ltd, the flagship arm of the diversified conglomerate, the NeST Group provides end-to-end design-engineering-software-manufacturing solutions to clients across geographies such as the USA, Canada, Europe, Middle East, South East Asia, Japan, Australia, and India. SFO has invested in building competence, scale and standards compliant process framework, in PCBA, fibre optics, Cable & wire Harness, Magnetics, High Level Assembly, VLSI design, embedded software development, etc. SFO's capabilities transcend the plain vanilla "Build-to-Spec or Build-to-Print" EMS and our ODM+ solutions are rapidly re-defining standards for the OEMs across Aerospace & Defence, Communications, Transportation, Healthcare and Energy & Industrial domains. .



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