

# Improve Asset Monitoring and Minimize Transformer Failure and Power Outages

## ■ Client Overview

The client is in the power generation and transmission sector.

## ■ The Challenge

The failure of transformers and the frequent repair requirements along with it are causing a huge monetary loss to the power generation and transmission sector. While this involves deployment of significant manpower to handle any unforeseen ground level problems, it does not help mitigate the risks of transformer failure. And failure and repair of transformers lead to power outages, causing inconvenience to society, and high revenue loss to power generation and transmission companies.

Hence, the client wanted to implement a large-scale, automated monitoring system for a large number of transformers to be able to determine when transformers start to fail or need unscheduled maintenance. This could be a Web application and mobile app that will enable employees to monitor the condition of transformers remotely.



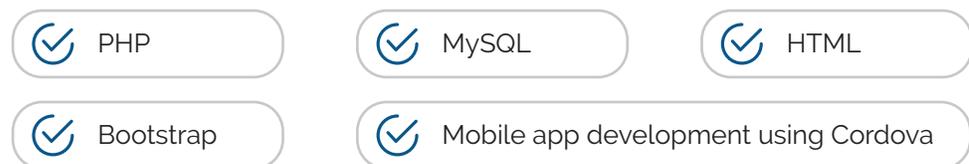
## ■ The Solution

Smart IMS developed an integrated IoT solution—along with the website and mobile app—that allows end users to register and log in directly to the system to view the current condition of each transformer.

The solutions feature both Advanced and Actionable Dashboards to display the condition of the electrical smart grid drill and transformer condition level, among other relevant information. It also has a Web admin role built to configure Smart Grid Operations, Employees, and Asset Information. Meanwhile, asset problem information such as Oil Temperature, Fuse Temperature, Improper Earthing, and Power Overloading are displayed through the existing energy meter on the DTR. Smart IMS provided unique data analytics solution integrated with the Web application:

- Monitoring and improving the energy efficiency of end user
- Dashboard for maximum demand and seasonal usage of power
- Real time monitoring system, including big data analysis by the extraction and aggregation of data from multiple meters + set up of the dynamic diagnosis system

Tools and technologies used in this project include:



It was developed using the Agile development methodology, from requirement gathering, mockup creation, designing, and architecting to testing and deployment and UAT.



## ■ Benefits Delivered



Improved decision-making (regarding transformer conditions and performances across the smart grid level & state level)



More seamless monitoring through reports and configuration of the Smart Grid Operations (including employees and asset information)



Remote monitoring of transformer behavior and condition



Intelligence-based action prioritization (through mobile notification)



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