IoT-Enabled Renewable Energy Management Solution Improves Asset Monitoring

For a Leading Clean Energy Generation Company

The client is one of the largest clean energy generation companies with renewable energy farms in Europe, USA and Africa. It builds, owns and operates renewable energy power plants to generate clean energy through renewable sources namely wind, solar, bio mass and hydro.

Behind the Scenes

For effective power plant operations, a lot rides on how the plant is being monitored and maintained. Without monitoring, performance measurement becomes hard which further reduces the scope of all optimization opportunities. Internet of Things (IoT) can empower companies like never before. It makes everything automated to remotely receiving real-time, customized alerts from multiple data sources and asset monitoring.

Can Internet of Things (IoT) Change the Game Forever?

1 Strategy and Objectives

The client was looking for a platform for managing its power plants remotely, which were connected by IoT Gateways for collecting data from wind turbines, solar panels or hydro plants. The solution was to leverage Happiest Minds' IoT platform (MIDAS) to gather data from multiple farms with multiple assets / industrial protocols and expose the data using Industry standard protocols like OPC, OSI Pi, and Modbus.

- **Acquiring the data from wind turbines and solar panels**
- **Handling multiple components involved in the system to subscribe, store and post**
- **Fetch data for asset monitoring and events**

2 Value Chain

Seeing future perspective, the client wanted to diversify its portfolio by managing other solar and wind energy farms. But, the cost of managing the assets were high and there was no uniformity in the interfaces exposed by various farms. A robust and next generation monitoring system was need of the hour.

- **IoT platform**
- **Secure and robust remote monitoring**
- **Predictive maintenance**

3 Enablers

Happiest Minds build a solution around its MIDAS platform from scratch using open source technologies to reduce cost and scale the business for farms in Europe and US. This encompassed customization and deployment of Happiest Minds' IoT platform (MIDAS), application development/integration, as well as L2/L3 support via IoT operation centre. This was a multi-tenanted system to cater to the needs of different customers owning multiple farms.

- **DAC system— for the acquisition of data from wind turbines and solar panels**
- **MIDAS— for customizing and deploying IoT platform**
- **OPC DA Client – for two main functionalities to fetch the data from OPC server for time-based and value change based group and also to fetch the event based data for asset monitoring and alarms\events group**

We have provided deployment and managed services to ensure that the platform uptime met the SLAs committed by the client to different farm owners.

4 Digital Capital Delivered

The solution enabled a new business model by re-designing the platform for scale and cost. We undertook complete ownership of the technology from development to deployment allowing the client to focus on their core business.

Helped the client remotely manage and maintain farms from a centralized solution

Boosted operational efficiency and reduced cost

Improved predictive maintenance

ABOUT US

Happiest Minds, the Mindful IT Company, applies agile methodologies to enable digital transformation for enterprises and technology providers by delivering seamless customer experience, business efficiency and actionable insights. We leverage a spectrum of disruptive technologies such as: Big Data Analytics, AI & Cognitive Computing, Internet of Things, Cloud, Security, SDN-NFV, RPA, Blockchain, etc. Positioned as "Born Digital . Born Agile", our capabilities spans across product engineering, digital business solutions, infrastructure management and security services. We deliver these services across industry sectors such as retail, consumer packaged goods, edutech, e-commerce, banking, insurance, hi-tech, engineering R&D, manufacturing, automotive and travel/transportation/hospitality.

Headquartered in Bangalore, India; Happiest Minds has operations in USA, UK, The Netherlands, Australia and Middle East.

Know more about how we are enabling our clients to deliver digital capital faster.

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