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Big Data & IOT Solutions

APPLICATION MODERNIZATION

About the Client

Medium size company in the oil and gas industry in the United States. The company used traditional monitoring and control systems to manage its operations.

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Challenges

Client's teams, currently tracked their metrics via trained operators and manually created documents. The goal was to architect an application that will improve efficiency and modernize its operations.The application had to be built with a pro-active approach in mind with regards to critical equipment issues, system failures, and optimization of their capital equipment.

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1. **On-Site Server:** beside a cloud integration, the company needed to store and access data and applications on site without relying on internet connectivity.
2. **Big Data storage and Analytics:** the system ingests the data from the sensors and applies advanced analytics techniques to identify patterns and trends that help the company improve its operations.
3. **Embbeded systems(IoT):** the application had to include control mechanisms that allow to remotely monitor and adjust the operations as needed.
4. **Interoperability** with 3rd party O&G API's.

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Solutions and key measures

We recommended a hybrid approach for their specific case, that combined on-site server data and analytics with AWS cloud solutions. Key implementations included:

1. Monitoring system for turbine, pump vibration anomaly alerting and turbine efficiency monitoring; pro-active maintenance scheduling
2. Fleet-wise alert management and response department
3. Secure data connections to customer portals and interoperability with third-party O&G API's.
4. SMS text alerts for maintenance engineers & C-suite leaders
5. Secure, custom websites for internal USWS decision makers and individual USWS customers.

Technologies used

AWS

Java

React

MongoDB

.NET

Python

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