Smart Predictive Condition Monitoring for Industrial Pumps

Empowering Industrial Operations with Data-Driven Maintenance and Predictive Insights

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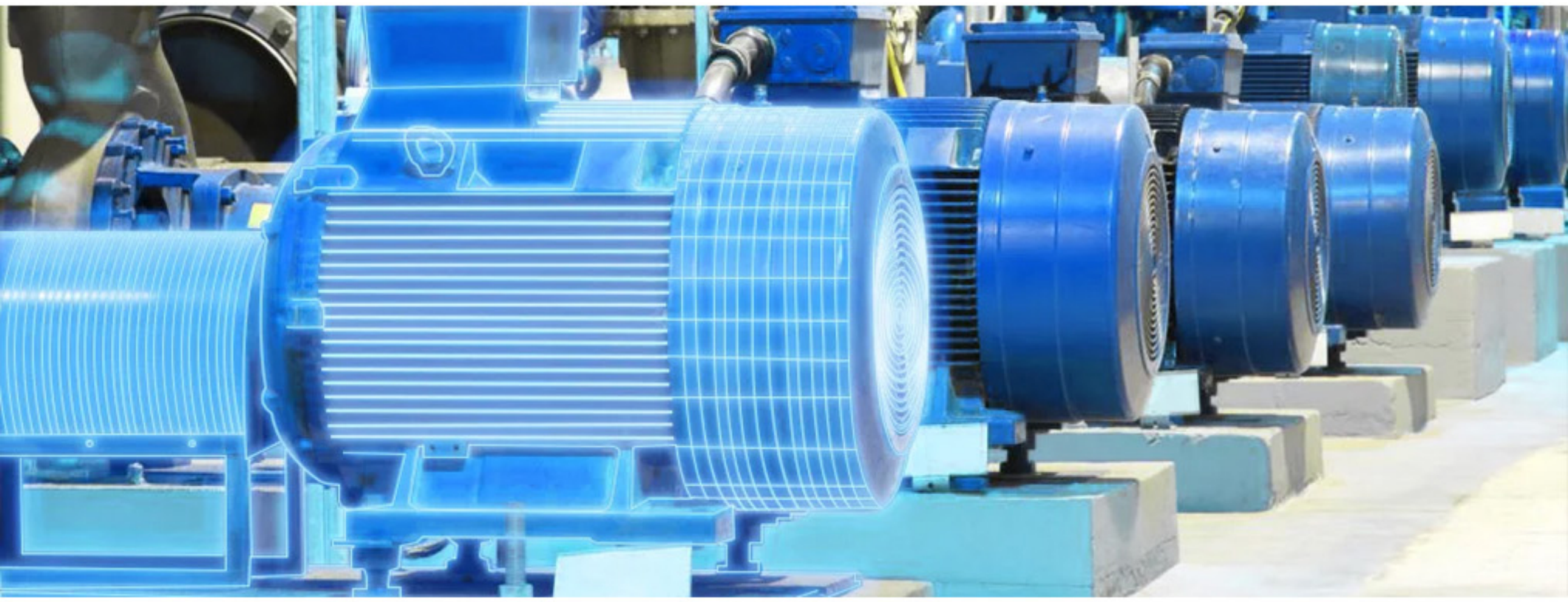
The Challenge



The client's critical pumping operations were hindered by maintenance inefficiencies and limited system visibility, leading to reliability risks and higher operating costs:

Unplanned Equipment Failures:
Frequent pump breakdowns disrupted production cycles, increased downtime, and raised emergency maintenance expenses.

Reactive Maintenance Practices:
Reliance on manual inspections delayed fault detection & prevented timely interventions, reducing operational efficiency.

Data Fragmentation Across Systems:
Disconnected monitoring platforms made it difficult to correlate mechanical and electrical performance data for informed decision-making.

Lack of Real-Time Insights:
Absence of integrated vibration, temperature, and speed monitoring restricted visibility into asset health and performance trends.

Our Smart Approach

Avanceon delivered a sensor-based Predictive Condition Monitoring System engineered for 80 pumps designed to transform maintenance from reactive to predictive.

Predictive Monitoring Deployment:
Implemented a predictive monitoring system for 80 pumps to enable proactive maintenance.

Comprehensive Sensor Integration:
Equipped each pump with IFM vibration, temperature, and speed sensors for full mechanical insight.

Seamless Digital Communication:
Enabled real-time, noise-free communication through IO-Link technology.

Intelligent Analytics & Visualization:
Integrated Moneo RTM software for predictive fault detection and trend visualization.

Centralized Control & Monitoring:
Connected CMS and SCADA for centralized monitoring and alarms.

Wireless Accessibility:
Introduced wireless connectivity (Anybus Bolt II) to simplify maintenance and reduce wiring.

End-to-End Turnkey Delivery:
Delivered complete turnkey services backed by Avanceon AMS for ongoing support and system optimization.

Secure & Scalable IIoT Infrastructure:
Powered by OmniConnect™ IIoT platform ensuring data security, scalability, and reliability.

The Impact

Predictive Maintenance:
Early anomaly detection prevented breakdowns and optimized maintenance schedules.

Reduced Downtime:
Real-time alerts minimized unplanned outages.

Operational Efficiency:
Continuous monitoring improved energy usage and asset reliability.

Extended Equipment Life:
Data-driven insights reduced wear and mechanical stress.

Centralized Control:
Unified SCADA integration provided 360° visibility across all pumps.

Scalable Future:
The infrastructure now supports Digital Twin and AI-based predictive modeling, aligning with smart plant transformation goals.

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Let's Redefine Reliability Together

Partner with Avanceon to accelerate your digital transformation journey from real-time monitoring to predictive intelligence

Get in Touch

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