



ASSET PERFORMANCE MANAGEMENT

*DRIVING OPERATIONAL EXCELLENCE
THROUGH PREDICTIVE ANALYTICS*



Asset-intensive organizations face growing pressure to operate safely, reliably, and efficiently while controlling costs and mitigating risk. Increasing system complexity, vast data volumes, and workforce transitions have exposed the limitations of reactive and time-based maintenance strategies. Asset Performance Management (APM) has emerged as a critical capability for organizations seeking to improve reliability, reduce unplanned downtime, and drive measurable financial value.

CAMS' Asset Performance Management platform delivers a real-time, predictive analytics solution that transforms large volumes of operating data into a focused set of actionable insights. By combining advanced machine learning, proven anomaly detection techniques, and deep operational expertise, CAMS APM enables early detection of reliability and performance issues, before they impact safety, production, or revenue.

The Challenge of Modern Asset Management

Today's power and industrial facilities generate hundreds of thousands of data points from sensors, control systems, and historians. While data availability has grown, the ability to convert that data into actionable intelligence remains limited. Common challenges include:

- Late identification of developing equipment failures
- Difficulty prioritizing maintenance based on true operational risk
- Loss of institutional knowledge due to workforce turnover
- Inefficient use of fuel, auxiliary power, water, and chemicals
- Limited visibility into the financial impact of reliability issues

Without a structured, predictive approach, many issues remain hidden until they result in forced outages, safety incidents, or lost revenue.

CAMS APM: A Predictive Analytics Approach

CAMS Asset Performance Management is a cloud-based, rapidly deployed predictive analytics service designed to address the realities of modern operations. The CAMS APM philosophy is built on three core principles:

- **Industry Best Practices:** Proven reliability and performance methodologies embedded into analytics and monitoring models.
- **Operational Expertise:** Analytics grounded in real-world experience from CAMS' power operations and maintenance teams.
- **Site-Specific Customization:** Each deployment is tailored to the customer's assets, operating strategies, and business objectives.

This approach ensures insights are practical, actionable, and aligned with how facilities operate day-to-day.

Key Benefits

CAMS APM enables organizations to move from reactive response to proactive decision-making, delivering value across safety, reliability, and financial performance.

- **Safer Operations:** Early detection of abnormal conditions reduces the likelihood of hazardous equipment failures.
- **Improved Reliability and Uptime:** Emerging issues are identified and addressed before escalating into forced outages.
- **Enhanced Operational Efficiency:** Performance deviations are detected early, enabling optimized use of fuel, power, water, and chemicals.
- **Condition-Based Maintenance:** Maintenance is prioritized based on asset health and impact, strengthening both short- and long-term planning.
- **Preservation of Knowledge:** Issue histories, diagnostics, and resolutions are captured, reducing dependence on individual experience.

CAMS APM Differentiators



Sensor-agnostic architecture



Rapid deployment



Minimal burden on O&M team



CMMS and ERP integration



Risk & ROI calculations



3,000+ ML model templates

CAMS APM stands apart from traditional analytics platforms through a combination of flexibility, speed, and domain expertise:

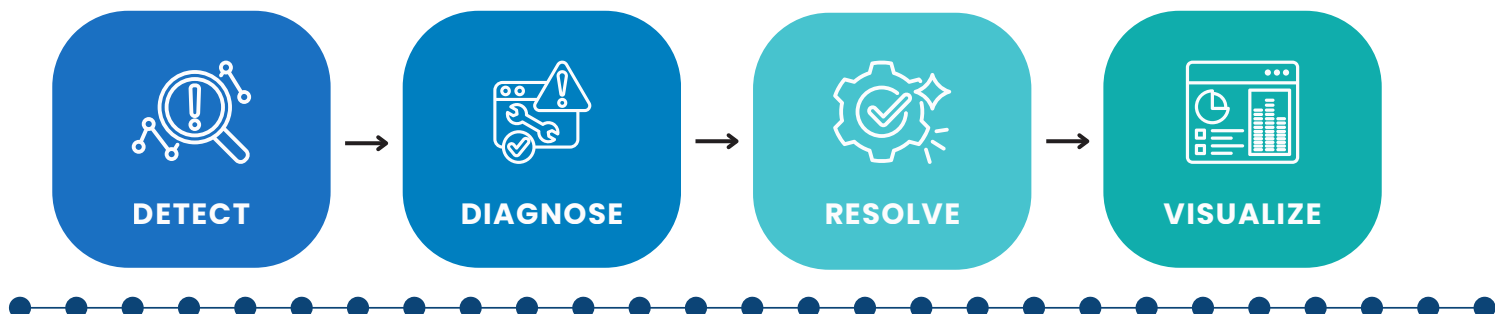
- **Sensor-agnostic architecture** compatible with any data historian, including OSI-PI
- **Rapid deployment**, operational in as little as one month
- **Minimal burden** on operations and maintenance teams
- **Optional CMMS and ERP integration** to connect analytics with execution
- Built-in Value at **Risk and ROI calculations**
- Library of more than **3,000 machine learning model templates**

Technology Overview

CAMS APM leverages a proven, scalable cloud platform built on artificial intelligence and advanced analytics:

- **Detect:** Thousands of models continuously monitor assets for early signs of reliability or performance risk.
- **Diagnose:** A powerful Data Explorer provides real-time and historical trending to support rapid root-cause analysis.
- **Resolve:** Integrated issues management workflows connect detection with resolution, driving collaboration and accountability.
- **Visualize:** Dashboards provide actionable KPI visibility at the asset, system, unit, and facility levels.

Through this lifecycle, hundreds of thousands of measured data points are reduced to approximately **10–20 high-value, actionable issues**.



ROI Metrics and Value Realization

A key differentiator of CAMS APM is its ability to quantify financial value. ROI and Value at Risk calculations are embedded directly into the issues management workflow, allowing teams to prioritize actions based on measurable business impact.

Key metrics include:

- **Cost Avoidance:** Prevented forced outages, equipment damage, and emergency maintenance
- **Revenue Recovery:** Recovered capacity, improved availability, and extended run time
- **Efficiency Gains:** Reduced fuel, auxiliary power, water, and chemical consumption
- **Maintenance Optimization:** Deferred or avoided work based on confirmed asset condition

Each issue is evaluated using probability-weighted financial modeling, enabling objective comparison across reliability and performance risks. ROI can be tracked at the issue, asset, facility, and program levels, providing leadership with clear visibility into value delivered.

Proven Results

CAMS APM has demonstrated tangible results across operating fleets:

- Recovery of **10 MW** in lost capacity, generating approximately **\$740,000** in additional revenue while **avoiding a potential multi-million-dollar forced outage**.
- Early detection of mechanical degradation that enabled safe operation to planned outages
- Identification of auxiliary equipment inefficiencies that reduced ongoing operating costs

These outcomes are documented collaboratively with customer teams to ensure credibility and continuous improvement.

Conclusion

CAMS Asset Performance Management delivers more than analytics—it delivers operational confidence. By combining advanced technology with deep operational expertise, CAMS APM enables organizations to operate safer, more reliably, and more profitably. In an increasingly complex operating environment, CAMS APM provides the clarity needed to stay ahead of risk and unlock the full value of critical assets.

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