

Keep manufacturing equipment running with predictable output and lower unplanned downtime costs

Increase overall throughput and equipment effectiveness with SAS® IoT analytics



Improve OEE.



Meet production goals while reducing costs.



Predict and optimize maintenance.



Lower energy costs and reduce waste.

The Issue

Manufacturers struggle with reaching productivity targets for various reasons, such as aging equipment that's no longer reliable or bottlenecks that lower throughput.

Improving asset or equipment uptime and availability is challenging. What can you do to predict unscheduled downtime on critical equipment? How - and where - can you improve asset inefficiencies for greater throughput? How can you shift from reactive and preventive maintenance to predictive maintenance for more uptime?

Suboptimal asset maintenance and the inability to resolve production issues result in lower availability, performance and quality while increasing production costs.

Moving from reactive maintenance to functional predictive maintenance results in industrial average savings of:

- 10x return on investment.
- 25%-30% reduction in maintenance costs.
- 70%-75% elimination of breakdowns.
- 35%-45% reduction in downtime.
- 20%-25% increase in production.

- US Department of Energy, *O&M Best Practices Guide*

And when you add analytics that drives decision making to predictive maintenance (PdM 4.0) you can realize additional savings:

- 12% cost reduction.
- 9% improvement in uptime.
- 14% reduction in safety, health, environment and quality risks.
- 20% extension of the lifetime of an aging asset.

- PricewaterhouseCoopers, *Predictive Maintenance 4.0 Beyond the Hype: PdM 4.0 Delivers Results*

The Challenge

Suboptimal maintenance cycles. Many manufacturers are stuck in the reactive and preventive maintenance stages, unable to avoid breakdowns or costly, unnecessary part replacements. SAS advanced analytics helps you shift to predictive or optimized maintenance while addressing sources of failure and performance degradation without driving up costs.

Unplanned downtime. Aging and underperforming assets can cause quality and availability issues. SAS delivers automated monitoring and predictive alerts that help you avoid major defects, prevent long downtimes and address potential performance issues before they escalate.

Lack of meaningful insights. Without analytics, it's difficult to understand where issues originate or how to fix them. SAS helps you quickly and accurately identify root causes to troubleshoot performance issues faster and more effectively.

Our Approach

Inability to optimize asset availability, performance and quality keeps manufacturers from realizing their true potential. SAS advanced analytics helps you discover how to improve OEE (overall equipment effectiveness) so you can optimize throughput, increase customer satisfaction, lower costs and make progress toward your sustainability goals.

We approach the problem by providing software and services to help you:

- **Increase availability and minimize downtime** by using analytics to shift to predictive maintenance, customize maintenance schedules to meet your actual needs and use machine-learning modeling to proactively lower the impact on operations.
- **Maximize equipment performance for greater efficiency** with analytics that helps you identify and address the root cause of inefficiencies and optimize set points for processes so your assets run at maximum efficiency for higher productivity.
- **Optimize throughput and reduce costs** by lowering interruptions to production, which saves operational costs on rush part deliveries, lost capacity and overtime costs for repairs. Having trustworthy assets allows you to reduce business costs, such as expensive safety stocks and lost sales.
- **Support sustainability efforts** with improved asset performance and optimized maintenance - efficiency increases and resources are conserved while costs go down.

The SAS® Difference

SAS enables you to discover unrealized opportunities from your existing equipment while reducing interruptions to production and monitoring and repairing quality issues. SAS anomaly detection algorithms look at the entire asset, not just one specific sensor. The results pinpoint the main issue so you can quickly discover what's wrong via root-cause analysis. SAS helps manufacturers:

- **Isolate and quantify the effects of anomalous factors that affect critical equipment.** By examining the relationships and predicting the impact of key data that comes into play with your equipment, SAS helps shift your maintenance strategy from reactive to predictive.
- **Run models in real time and get predictive alerts on maintenance issues.** SAS lets you perform the right maintenance at the right time for maximum uptime.
- **Employ root-cause analysis tools and take corrective action quickly.** SAS has proven capabilities for achieving greater productivity and throughput.
- **Predict downtime to avoid unnecessary preventive maintenance and provide only the maintenance needed to deliver peak performance.** SAS enables you to improve availability, performance, quality and profitability while lowering energy costs and reducing waste.

CUSTOMER CASE STUDY

GLOBAL MULTI-INDUSTRY MANUFACTURER

This multinational corporation had a quality initiative to drive improvements and positive operational impacts from analytics. It needed to improve quality, increase product delivery speed, control costs, monitor KPIs and improve process quality while reducing process variation. Using SAS, the manufacturer discovered an approach to increase capacity and realized:



30%
yield improvement and better
product field performance



\$10 million
cost reduction
per year



912% IRR,
\$38.9 million NPV,
3 months to payback

Learn more about [how SAS can solve your manufacturing challenges.](#)

