



Life Is On

Schneider
Electric

Enterprise Asset Performance Management

Using the comprehensive Enterprise Asset Performance Management (APM) solution offered by Schneider Electric, organizations can monitor their assets to identify, diagnose and prioritize impending equipment problems — continuously and in real time. This enables companies to reduce unscheduled downtime, prevent equipment failures, reduce maintenance costs, increase asset utilization, extend equipment life and identify underperforming assets.

software.schneider-electric.com/eapm

Enterprise Asset Performance Management

Overview

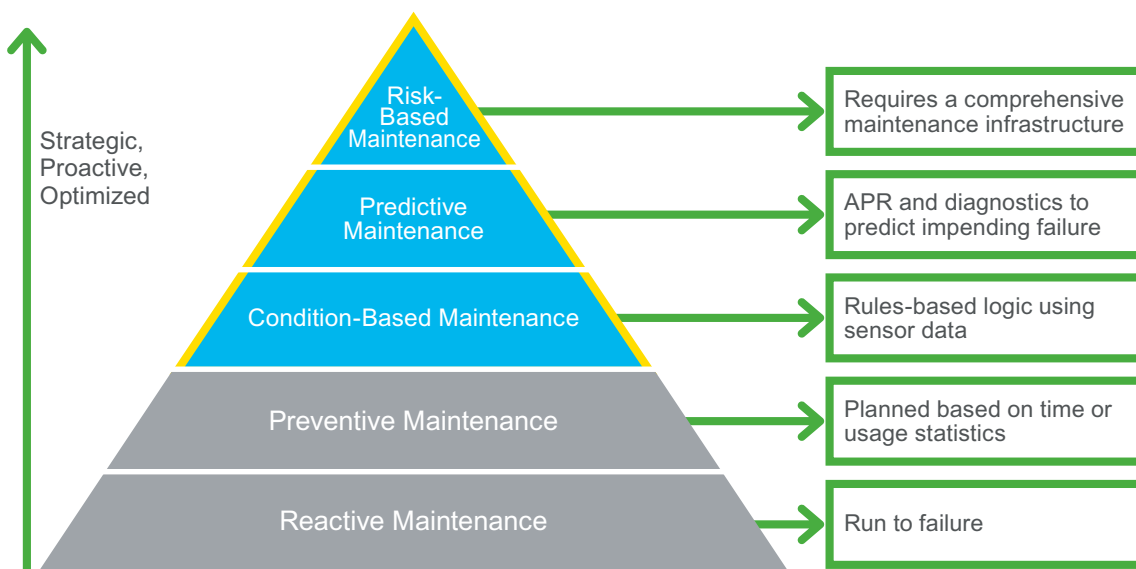
With pressure from new regulations and consumers, operating with the highest levels of efficiency, reliability and safety is a top priority. Technology triggers like the Industrial Internet of Things, big data analytics, mobility and workflow collaboration represent new opportunities for significant reliability, efficiency and safety improvements. In addition, an aging infrastructure and workforce is driving the need for asset renewal prioritization and knowledge capture.

The market is shifting from a corporate top-down approach that has focused on managing the asset lifecycle through improved maintenance visibility and standardized practices to a holistic and operations-centric view where proactive and predictive maintenance opportunities empower front-line personnel to act before costly failures occur. With Enterprise Asset Performance Management (APM) solutions, personnel can exceed safety, reliability, and performance goals through data collection and analysis coupled with actions and optimization for proactive and predictive maintenance execution. As a result, plant personnel are empowered to act before equipment failure occurs.

Maintenance Practices

Enterprise APM solutions integrate all the various elements of a comprehensive maintenance program, making valuable information accessible and delivering context for smarter decisions. It requires a broad portfolio to collect data on assets, analyze it, determine the next course of action and use that action to further refine and optimize processes. This continuous improvement program is outlined with the Maintenance Maturity Pyramid.

The higher you move up the Maintenance Maturity Pyramid, the more proactive the strategy becomes and the more advanced warning of equipment problems is required. This enables maintenance teams to better plan resources, order materials, and minimize unplanned events.



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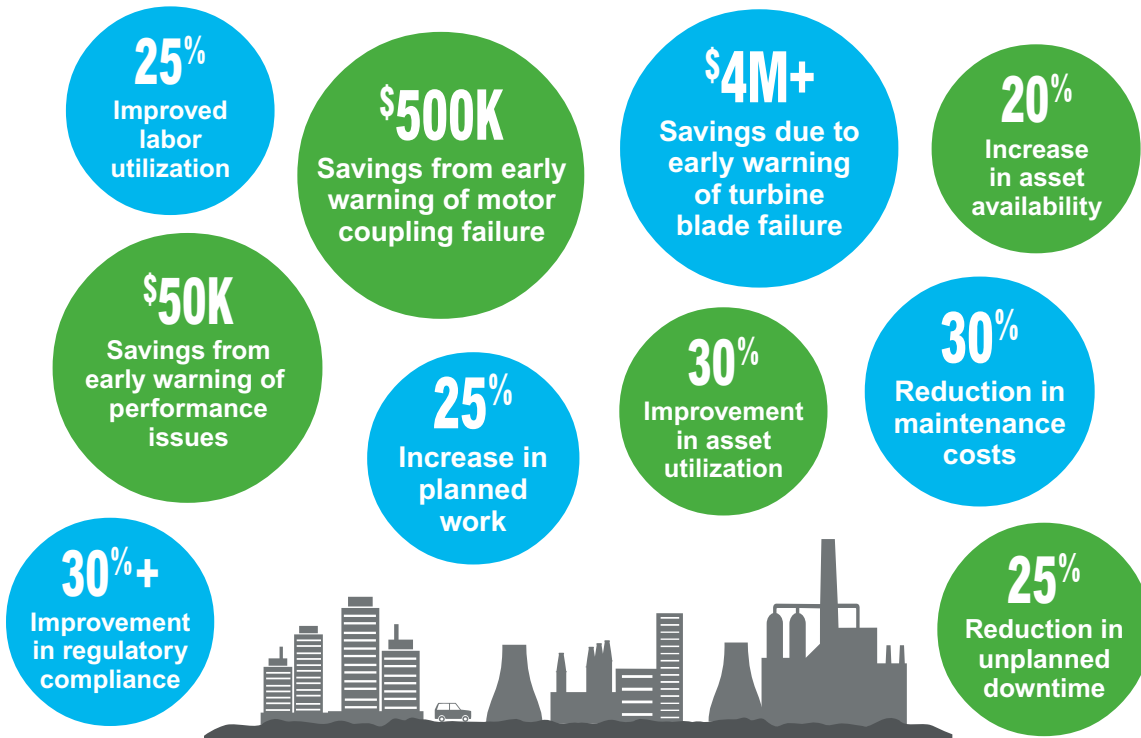
Maximizing Economic Return on all Assets

The end goal of implementing a comprehensive maintenance program that moves to a more proactive and continuous improvement approach is to deliver the greatest economic return for all asset types. This is made possible by integrating various technologies and devices, and applying advanced analytics to determine where improvements should be made.

Benefits span all functional areas from strategic, to operational, to financial and safety. Operational benefits can be achieved through the early identification of equipment problems to reduce unplanned downtime. Engineers can spend less time sifting through raw data and spend more time improving the reliability and performance of assets. There are financial and safety benefits to be achieved through increased asset utilization and reduced downtime, as well as the opportunity to identify equipment problems before a major failure causes significant or catastrophic damage.

In addition to improving reliability and availability, companies are looking to reduce purchasing costs, improve maintenance scheduling and defer capital expenditures. They are looking to optimize resources and planning by improving communication across disciplines. A spatial view of assets provides context for decision-making while optimizing resource planning and scheduling of remote workforces. Workforce enablement, in particular mobile workforce enablement, allows workers on the field to collect data remotely to implement conditionbased maintenance tactics.

Actual Savings Achieved with Enterprise APM

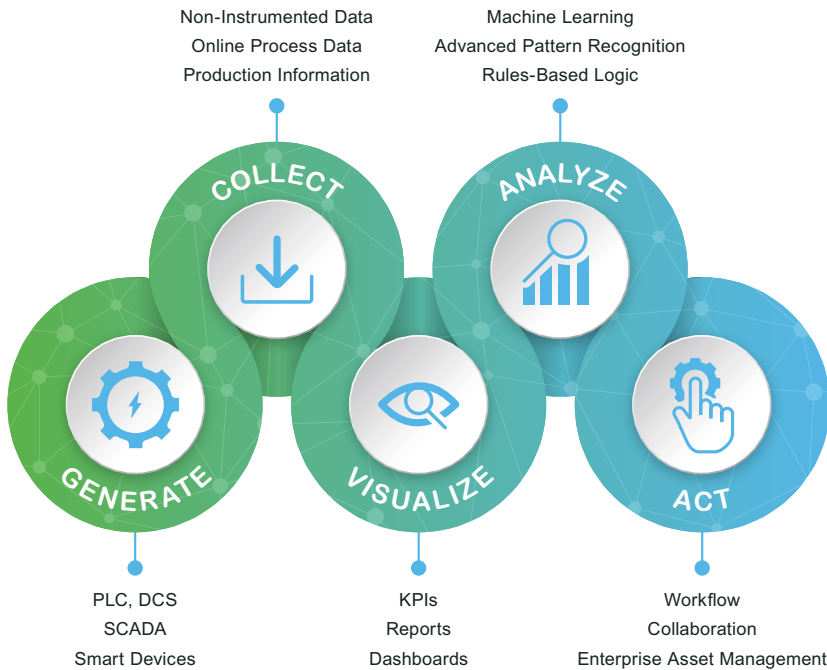


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Schneider Electric Enterprise APM Solution

Schneider Electric offers an end-to-end solution that manages the collection of data from any number of sources, incorporates advanced analytics technology that combines machine learning with analytic rules and provides a complete enterprise asset management platform to manage asset lifecycle and maintenance processes. It also includes a variety of interactive visualization capabilities for presenting this information in intuitive ways on mobile devices and platforms.

No matter what level of maturity your organization has achieved on the Maintenance Maturity Pyramid, Schneider Electric software products can get you one step closer to asset performance excellence. The comprehensive offering is equipment and vendor agnostic for seamless integration with existing equipment and technologies, enabling you to maximize the value of previous investments through proactive asset health and performance monitoring.



Collect

Enterprise Data Management

Wonderware eDNA is a real-time data management software platform that collects, stores, displays, analyzes, and reports on operational and asset health information to transform real-time data into actionable insights. Wonderware eDNA easily integrates with hundreds of control, monitoring and enterprise business systems. The software platform includes a highly scalable enterprise data historian for archiving and rapid retrieval of high fidelity time series data. An advanced lossless compression technology is used to minimize the required storage capacity while maintaining the original collected resolution of the data. For companies looking to limit IT overhead, Wonderware Online is a cloud-based historian utilizing the latest in safe, secure cloud technology.

Schneider Electric Solution Advantages

- We offer the only comprehensive Enterprise APM solution – from data sources, to advanced analytics, to work management, to the boardroom
- Implementation methodology is proven to reduce customer risk and improve satisfaction
- Predictive asset analytics provides early warning of impending equipment failures
- Unparalleled ease of use and access to contextual information for decision support on any device

Enterprise Asset Performance Management

Mobile Workforce Enablement

Wonderware® IntelaTrac is the leading mobile workforce and decision support system that includes configurable software and ruggedized mobile hardware solutions that enable workflow, data collection and general task management for plant operations, maintenance management, and production tracking and compliance applications. IntelaTrac manages the processes and procedures used to ensure that organizations consistently execute all field tasks required to achieve reliable operations.

Analyze

Condition-based Analytics

Avantis® Condition Manager automates maintenance processes through the integration of real-time and historical data with user defined rules to drive condition-based maintenance activities. Avantis Condition Manager uses a rules-based engine to analyze asset data and provide context on the operational state. The rules configured within Condition Manger are fixed and do not significantly change based on equipment loading, ambient or operational conditions. Actions triggered by Condition Manager can include simple warnings and notifications, automated work requests to an EAM or complex multi-step workflows involving different groups and processes in the organization.

Predictive Asset Analytics

Avantis PRiSM helps organizations gain the highest return on critical assets by supporting predictive maintenance (PdM) programs through early warning detection of equipment issues ahead of existing operational alarms. The solution is based on a proprietary algorithm called OPTiCS that uses Advanced Pattern Recognition (APR) and machine learning technology. PRiSM learns an asset's unique operating profile during all loading, ambient and operational process conditions. Machinery sensor data from the historian is input into the software's advanced modeling process and compared to real-time operating data to determine and alert upon subtle deviations from expected equipment behavior. Once an issue has been identified, the software can assist in root cause analysis and provide fault diagnostics to help the user understand the cause of the problem. With predictive analytics, personnel know and understand the actual and expected performance for an asset's current operational state and are able to identify a performance issue or impending failure days, weeks or months before traditional practices.

The combination of known rules (CBM) plus APR and machine learning (PdM) results in a robust industrial asset analytics platform. Access to contextual data enables organizations to look at previous maintenance and production data for an asset, combine that information with insight from the predictive analytics solution and make an informed choice of what action needs to be taken.

Act

Enterprise Asset Management

Avantis.PRO enterprise asset management software provides a world-class technology foundation for preventive maintenance programs. Avantis.PRO delivers comprehensive work management functionality, advanced scheduling capabilities, tightly connected MRO inventory and procurement management to drive efficiency in the supply chain and enables a remote workforce to have access to this information on a mobile device.

Business Process Management

Wonderware Skelta BPM software offers advanced workflow solutions and a complete set of tools for creating, executing, and optimizing business processes. A fully embeddable web-based architecture and strong integration capabilities with plant systems ensures collaboration throughout the enterprise.

Enterprise Asset Performance Management

Visualize

Operational Intelligence

Wonderware Intelligence automates the transformation of data across multiple sources and Manufacturing Big Data into actionable real time metrics and Key Performance Indicator (KPI) information in the context of the manufacturing and operational processes. Easy-to-use analytical capabilities, interactive reports and dashboards provide real-time visibility, self-service access to information and facilitate cross functional collaboration for operational performance improvements and alignment with business targets.

Mobile Reporting

Wonderware SmartGlance mobile reporting provides real-time access to critical KPIs and process or operational data via popular smart phones and tablets. Reduce costs and improve productivity while making faster and better decisions by reviewing, analyzing and collaborating around your process or company data on mobile devices.

Further Information

For more information about Schneider Electric's Enterprise APM solution, please visit: software.schneider-electric.com/eapm.