WEBINAR SUMMARY

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Smart Industry INSIGHT WEBINAR SERIES

Extend Legacy Equipment Life with Condition Monitoring

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KEY TAKEAWAYS

- Proactive maintenance reduces cost and improves operational efficiency.
- Legacy equipment lacks capabilities necessary to benefit from the digital transformation.
- Following a simple, four-step framework increases success of continuous monitoring implementation.
- ATS offers a value-added partnership for success.

in partnership with

ATS Advanced Technology Services, Inc.

OVERVIEW

As facilities undertake the digital transformation, shifting from a reactive to a predictive—or condition-based—maintenance program can have a significant impact on operations. A reactive (unplanned) maintenance approach costs 40% more time and effort for maintenance organizations over proactive (planned) maintenance practices (according to the U.S. Department of Energy).

Drawing on nearly 40 years of experience serving customers in diverse manufacturing environments, ATS offers an end-to-end, machine health monitoring solution for enterprises looking to enhance the performance and lifetime of existing equipment. Powering smarter factories with a market-leading, connected platform, the ATS Reliability 360® Machine Health Monitoring solution enables continuous monitoring and real-time alerts to support proactive maintenance, minimizing unplanned downtime and maximizing production availability.

DESCRIPTION

Micah Statler, Director of Industrial Technologies at ATS, explored the advantages of integrating predictive technology within legacy systems and highlighted a simple, four-step framework for implementing a successful condition monitoring program.

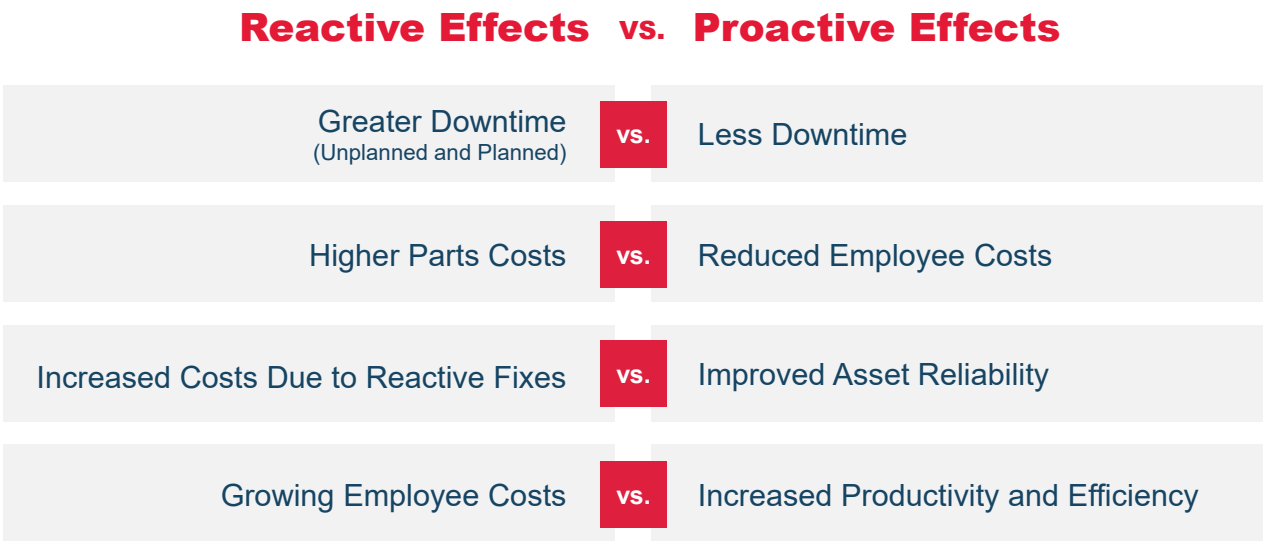
KEY TAKEAWAYS

Proactive maintenance reduces cost and improves operational efficiency.

While reactive maintenance has a ripple effect, increasing downtime in other resources, proactive maintenance shifts maintenance practices to reduce damage to upstream or downstream components potentially impacted by a faulty piece of equipment. Using predictive technology to shift to proactive maintenance reduces the cost of maintenance labor and downtime and overall spend on parts, improves asset reliability, and increases productivity and efficiency.

However, proactive maintenance can be difficult to practice when dealing with machines that are not networked or cannot be secured to today's cybersecurity standards. This is often the case when dealing with legacy equipment.

Figure 1: Benefits of integrating predictive technology



Legacy equipment lacks capabilities necessary to benefit from the digital transformation.

Legacy equipment is older and often outdated equipment, technologies, or processes still in use within a manufacturing plant. However, the rapid evolution of technology can make identifying "legacy" equipment challenging. What might seem new in terms of age, especially in comparison to cumbersome equipment from the mid-20th century, can quickly shift to legacy status from a technological and support perspective.

Specific challenges to proactive maintenance created by a lack of insight into legacy equipment falls into four main categories:

1. **Insufficient networking to support new technology.** Even those assets that might not be clearly defined as "legacy" will have issues with connectivity, whether controls networking or communications protocol.
2. **Cybersecurity risks with legacy equipment.** Networking outdated operating systems can open up the equipment to security risks, including ransomware. Without the appropriate protocols in place, bringing legacy equipment onto the network can create high-risk security holes.
3. **Hidden data and its value.** Without the proper protocols in place, equipment data cannot be leveraged for proactive maintenance. Data regarding operational settings, process quality, sustainability, and more cannot be accessed without networking.
4. **Managing and utilizing data effectively.** Not having access to data makes it difficult to assess even the basics of equipment efficiency, such as runtime and overall equipment effectiveness (OEE).

Yet, legacy equipment still plays a key role in a majority of facilities and plant processes. Rather than retiring legacy equipment, there are alternatives that help operators get the most out of their equipment by enabling remote machine monitoring and security.

Following a simple, four-step framework increases success of continuous monitoring implementation.

A 2020 study conducted by International Data Corporation found that across a range of market verticals, the average cost per hour of unscheduled downtime is $110,000. Although at an asset level, downtime might appear to cost significantly less, the inclusion of hidden costs such as lost sales of product, maintenance labor costs, fees due to missed production costs from downtime of more critical equipment, and more creates a much larger scope of impact.

> "The average cost per hour of unscheduled downtime is $110,000."
>
> *Source: Accelerating Industry 4.0 Through Remote Monitoring and Diagnostics, IDC, 2021*

Increasing equipment reliability through predictive technology (continuous monitoring) can help manufacturers avoid such a large loss. Fortunately, achieving improved reliability can be accomplished by applying a simple framework.

Step in Framework	
1. Define the journey	This involves understanding the root of a specific problem that needs to be addressed and making assessments to identify areas of improvement. This step also includes defining KPIs that align with objectives, to calculate true ROI. Continuous monitoring should enable sustainable change by reducing or eliminating downtime and optimizing equipment availability for the greatest throughput. Continuous monitoring does not always prevent failure, but it does give operators advance notice of irreversible failure mode, allowing work to be scheduled during a planned outage.
2. Establish a business case	Investments should yield a return, which requires quantifying the benefits of a continuous monitoring solution. Aligning all stakeholders on what the ROI considerations are, including financial and operational advantages, is critically important. Both accurate calculations and cross-enterprise buy-in are needed for a predictive technology initiative to be successful.
3. Determine most impactful steps	Conduct a risk assessment centered on impact of failure. Root cause analysis (RCA) and Failure mode and effects analysis (FMEA) work well at an individual asset level. But across an entire plant, where legacy equipment abounds, identifying asset criticality and constraints can highlight individual assets that are more likely to cause high-cost downtime in the event of failure. This step should ensure asset readiness for continuous monitoring and integration capabilities, including ongoing availability of parts and support for the equipment.
4. Build a foundation for the future	To move forward with predictive technology, solutions supporting equipment—both legacy and current—need to be in place. Network infrastructure should be capable of data transfer and cybersecurity measures implemented across the board. Developing a data management strategy depends not only on the current topography of the environment but also future plans for IT and OT infrastructure. Every business operates at a different stage of maturity.

Throughout every step of the framework, identifying where steps can be accomplished in-house versus what requires outside development assistance facilitates putting the right supports in place for a successful implementation.

For example, ATS works with engineering-level stakeholders at the plant to investigate what is really happening on the floor. Part of the work conducted by ATS includes establishing a machine health score to compare against cost, quality, availability, productivity, and the telemetry needed to assess risk. ATS uses the overall asset scorecard to estimate how continuous monitoring can affect the balance between planned versus unplanned downtime. ATS also provides parts repairs and on-site technical services.

ATS also recognizes the importance of shareholder buy-in. For leaders such as plant managers or C-suite executives, the ROI of predictive technology goes beyond asset cost. As a result, ATS dives deep into the overall value story of avoiding risk and downtime, increasing asset reliability and performance, and implementing alert response and proactive actions. After the initial implementation of a continuous monitoring system, alerts can support an ongoing case for ROI, serving to demonstrate the value of avoided impact.

> "We hang our hat on an eight times ROI, on average, with our customers."
>
> *Micah Statler, Advanced Technology Services*

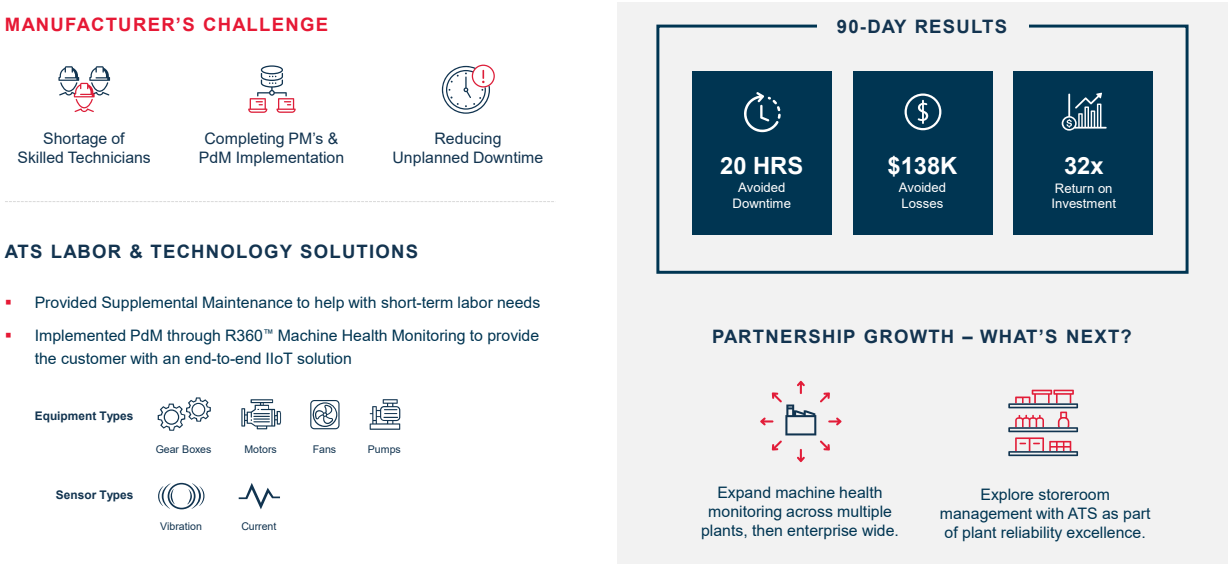
Figure 2: ATS provides an end-to-end IIoT solution

ATS offers a value-added partnership for success.

Unlike other machine health monitoring solutions, ATS has a centralized team of professional engineers and specialists that provide manufacturers the remote monitoring, data analytics, and prescriptive actions needed to keep their factories running better and smarter. The ATS Reliability 360® Technology Center offers the strategy, support, platform, and analytics needed for a successful end-to-end condition monitoring program.

In a recent ATS customer success story, the manufacturer realized a 32x ROI within the first 90 days of implementing the ATS Reliability 360® Machine Health Monitoring Solution, avoiding significant losses *(see Figure 3)*. As the single source solution for industrial maintenance, technology, and parts, ATS equips manufacturers with the right tools to optimize legacy systems and increase operational efficiency.

Figure 3: First 90 Days of R360™ Machine Health Monitoring Delivers 32x ROI



ADDITIONAL INFORMATION

To learn more about ATS, visit advancedtech.com

BIOGRAPHIES

Micah Statler

Director of Industrial Technologies, Advanced Technology Services

Micah Statler is the Director of Industrial Technologies at Advanced Technology Services and is responsible for the strategy, execution and delivery of technology-driven maintenance solutions. Micah is a graduate of Bradley University where he received his Bachelor of Science in Management and Leadership.

Robert Schoenberger

Editor-in-Chief, Smart Industry (Moderator)

Robert Schoenberger has been writing about manufacturing technology in one form or another since the late 1990s. He began his career in newspapers in South Texas and has worked for The Clarion-Ledger in Jackson, Mississippi; The Courier-Journal in Louisville, Kentucky; and The Plain Dealer in Cleveland, Ohio, where he spent more than six years as the automotive reporter. In 2013, he launched Today's Motor Vehicles, a magazine focusing on design and manufacturing topics within the automotive and commercial truck worlds. He joined IndustryWeek in late 2021.