Global Pulp and Paper Company Improves Production, Cuts Maintenance Costs

$11M USD Value
capture on 3 assets

CHALLENGES

- Increase production by 1% or more and increase safety by avoiding costly unplanned downtime for critical equipment

SOLUTION

Deployed Aspen Mtell® sitewide to enable proactive failure detection for more effective maintenance planning

BENEFITS

- 5-10% maintenance spend reduction

- 1-2% production recovery

- Failure detection up to 69 days in advance

reduce *risk*

This pulp and paper manufacturer, with global operations, delivers high-quality pulp to the whole world.The company focuses on innovation, sustainability, and people to drive success

In 2016, the organization set out on a mission to both predict risk and improve capacity using the power of automation. They wanted to understand how to monitor the health of complex equipment and systems using the data available. However, given that facilities have millions of sensors and mountains of inspection data, people alone could not possibly conduct a timely review. The company opted to move toward automated analysis.

More specifically, the paper producer sought to increase production by at least 1% while decreasing their $20M USD annual site-wide maintenance spend. The recovery boiler had suffered multiple catastrophic tube failures, shutting down the entire mill and causing $10M USD in production losses each time and increasing annual maintenance spend. Additionally, recurrent seal failures on a drum displacement washer introduced higher chemical costs.

The Journey Before Aspen Mtell

To bring this vision to life, the customer compiled specifications and requirements for nearly a dozen of their work processes. These requirements were used to not only evaluate potential automation suppliers but to build and test homegrown solutions as well. Working through the homegrown solutions helped the organization gain confidence that external investments would be worthwhile.

These searches and endeavors took nearly three years and delivered some successes. One internally built solution using a self-defined index to predict seal condition on the drum displacement washer enabled the manufacturer to better understand and confirm failure modes, creating confidence in action planning. After a year, the company reduced drum displacement washer seal failure from 135 to 37 failures per campaign.

This equated to $500,000 USD cost savings in repairs, maintenance, chemicals and lost production. The equipment still frequently failed, however. Additionally, the home grown model-building process required many resources and staff hours.

This left the customer facing a tough decision: continue developing in-house maintenance monitoring tools or grow their search for a solution that would allow them to focus on the results, not building algorithms. The simplicity of building Aspen Mtell agents provided this customer the focus and scalability they were seeking.

The company easily met their goals to increase production by at least 1% and reduce their $20M annual maintenance spend. With Aspen Mtell, they realized as much as a 2% production recovery in addition to a 5-10% reduction in maintenance spend. The paper company captured $11M USD in value on the first 3 assets where they deployed AspenTech's APM solution. With up to 69 days advance warning of failure, they were able to reduce unplanned downtime and the risk of safety incidents.

Drum Displacement Washer

Far surpassing the goal of 8 hours of event lead time, up to 69-day advance warnings allow for significant proactive repair planning. With Aspen Mtell providing a better understanding of the variables contributing to failures, the customer is able to better develop and fine tune more automating controls, reducing the need for manual operator intervention.

Recovery Boiler

The pulp manufacturer had a history of plant shutdowns due to recovery boiler failures; shutdowns lasting more than 8 hours cost at least $10M USD in losses per incident. Aspen Mtell's Maestro capability made quick work of identifying the key sensors contributing to the superheater clogging and the subsequent tube leaks. The solution also revealed that an existing operator procedure was contributing to failures by putting stress on the recovery boiler, making future prevention a more comprehensive fix.

Soot Blower

To detect bends in lance tubing, companies typically rely on visual inspection and the behavior of instrumented variables. Both techniques are subjective, leading to inconsistent mitigation. Aspen Mtell's ability to detect bending meant a nearly $50K USD per year cost savings for the customer.

The customer continues to focus on finding solutions to improve capacity using the power of automation in a secure but reliable and efficient way using existing data and resources. The AspenTech suite of asset performance management solutions provides the foundation for driving this effort.

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About Aspen Technology

Aspen Technology (AspenTech) is a leading software supplier for optimizing asset performance. Our products thrive in complex, industrial environments where it is critical to optimize the asset design, operation and maintenance lifecycle. AspenTech uniquely combines decades of process modeling expertise with machine learning. Our purpose-built software platform automates knowledge work and builds sustainable competitive advantage by delivering high returns over the entire asset lifecycle. As a result, companies in capital-intensive industries can maximize uptime and push the limits of performance, running their assets safer, greener, longer and faster. Visit AspenTech.com to find out more.

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