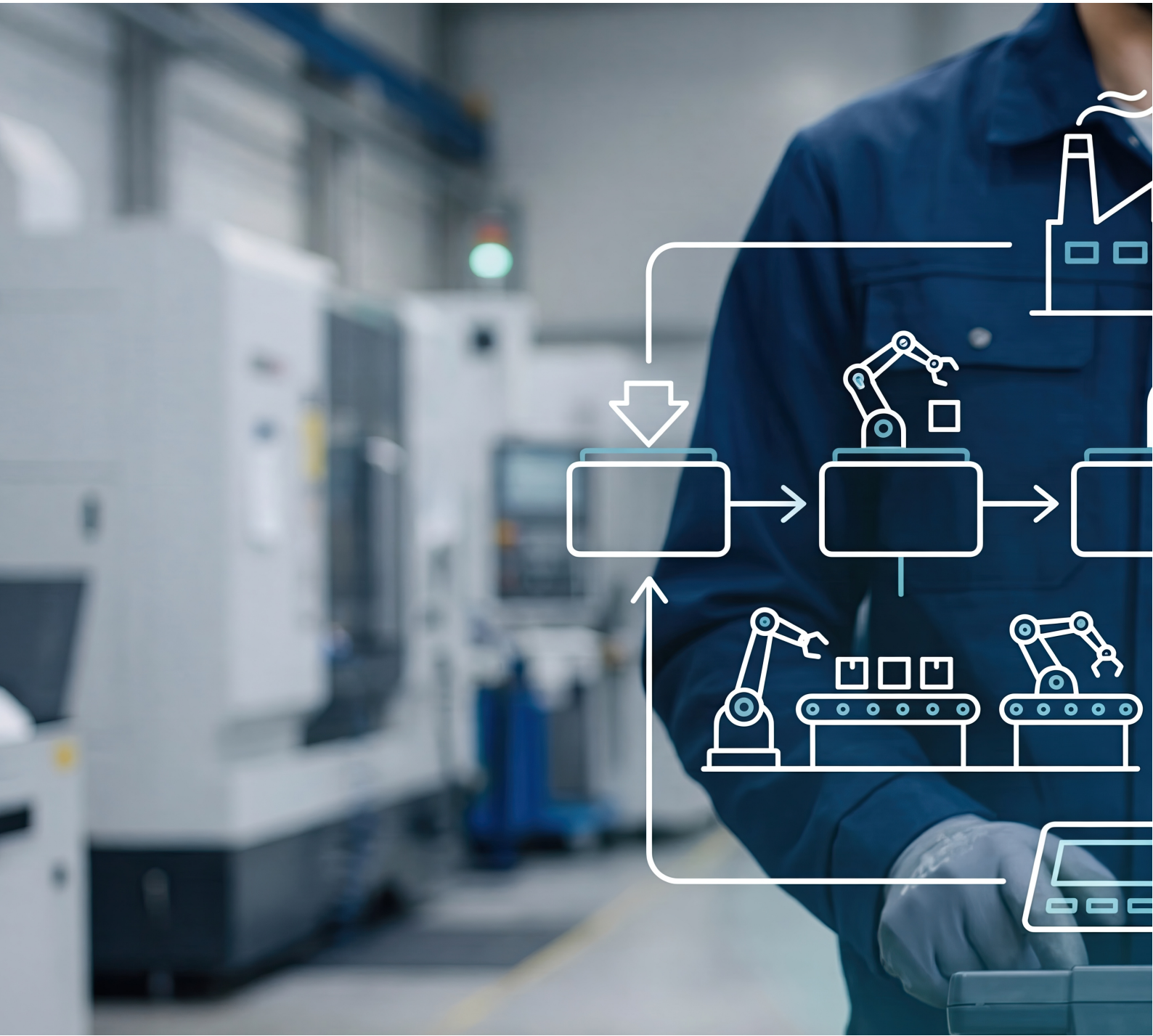


ANDRITZ MILL-WIDE OPTIMIZATION

Reach target values for key product properties with the lowest possible production cost

From isolated controls to coordinated, data-driven mill-wide performance

Most pulp mills still optimize individual process areas separately. Digesters, bleaching, evaporation, and recovery often operate with local targets and limited coordination. This approach creates hidden constraints, unbalanced inventories, and manual workload for operators. Production targets may conflict with cost or energy optimization, and disturbances are difficult to manage without affecting the entire mill. ANDRITZ Mill-Wide Optimization (MWO) solution addresses this challenge by introducing a mill-wide optimization approach. It coordinates production flows, inventories, energy, and costs so the mill operates as one connected system.



ANDRITZ MILL-WIDE OPTIMIZATION (MWO) 5

DRIVE COORDINATED DECISION-MAKING ACROSS THE ENTIRE MILL 6

MEASURABLE VALUES TO CUSTOMERS 7



What drives us forward?

ANDRITZ's aim is to make the fully autonomous mill a reality because of the measurable outcomes it brings to our customers' industrial plants. These outcomes impact three strategic pillars that directly influence operational performance.

PROCESS OPTIMIZATION

ASSET OPTIMIZATION

OPERATIONAL EFFICIENCY

These pillars make our value tangible, connecting solutions to what truly matters to our clients: real, measurable results.

How can we make a difference in your mill?

This is the question that guides the development of every ANDRITZ automation and digitalization solution for the pulp and paper industries. More than delivering technology, our commitment is to generate real and measurable impact on our customers' operations. We believe that true value lies in results you can measure. That's why we focus on outcomes that are tangible, trackable, and aligned with our customers' goals. In practice, this means connecting solutions that can act on:



These are real gains, connected to each pillar, transforming technology into tangible results. By connecting solutions designed to solve specific industry challenges, we deliver new ways to make a difference and contribute to results. This is how we transform technology into real value.

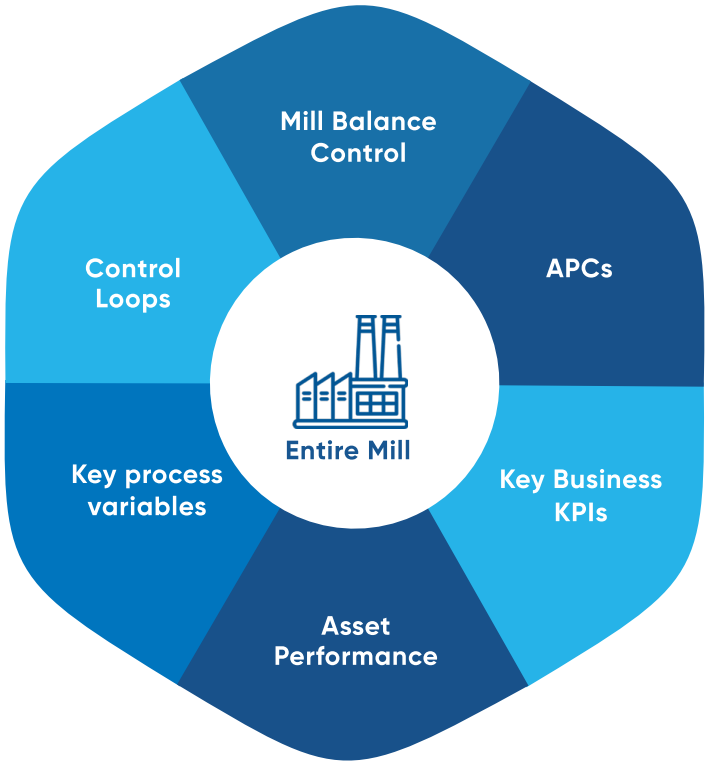
ANDRITZ Mill-wide Optimization (MWO)

Reach target values for key product properties with the lowest possible production cost

ANDRITZ MWO brings optimization to the mill level, connecting operational and economic decisions across the entire production chain. Instead of optimizing individual process areas separately, the solution evaluates how decisions in one area affect performance across the mill.

By combining plant balance models, process constraints, tank inventories, production targets, raw material costs, energy balances and quality requirements, MWO determines optimal set points and operating strategies based on the mill's overall objectives.

This mill-wide perspective helps operators identify constraints, understand operational trade-offs and act on optimization opportunities across interconnected processes. The goal is clear: maximize profitability while maintaining production stability and product quality.



This application also incorporates

- Greater focus on higher-value activities Enables operators to focus on higher-level operational decisions and priorities.
- Clear visibility of key mill targets Intuitive views consolidate production, cost and quality KPIs to support informed operational decisions.
- Better coordination with maintenance teams Consolidated automation and asset reliability information supports more direct interaction between operators and maintenance teams.
- Actionable process performance insights Dashboards highlight opportunities to improve process performance and support timely operational actions.
- Access to information in the field Mobile applications provide access to relevant operational information directly from the field.
- Mill-wide operational visibility High-level dashboards provide a consolidated view of plant operations and key performance indicators.
- Faster identification of operational constraints Area by area visibility helps operators quickly identify constraints and operating modes across the mill.

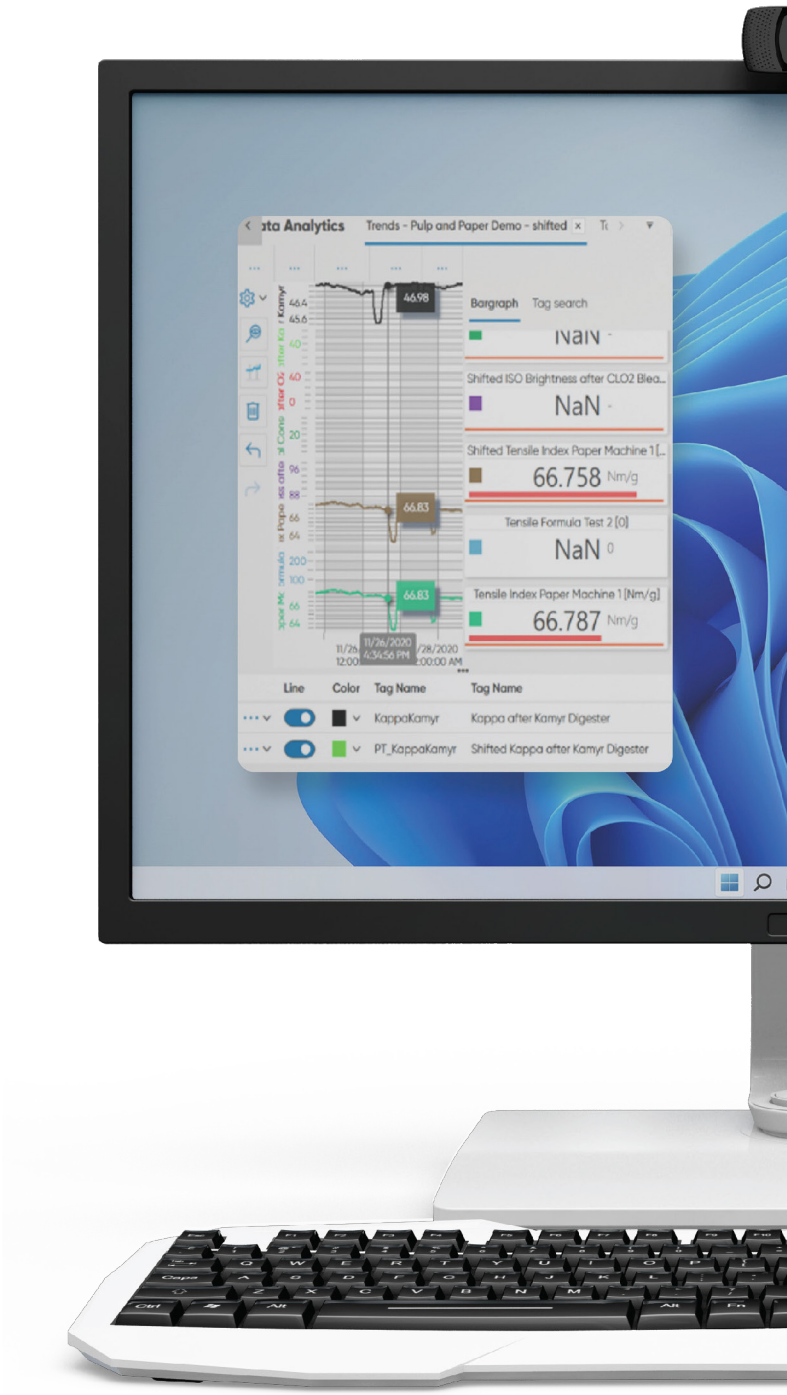
Drive coordinated decisions across the entire plant

PRODUCTION RATE AND INVENTORY MANAGEMENT:
Production is measured as accurately as possible at multiple points, starting from dry wood mass flow to the digester. Accurate measurements allow tighter process control and help avoid production upsets caused by poor data. Inventory and buffer management support stable mill operation and higher overall production rates.

QUALITY CONTROL AND COST OPTIMIZATION:
When individual unit processes are optimized, the solution applies process tests and analytical tools to define optimal production targets for the entire mill. The optimization considers raw materials, grade requirements, production limitations, energy costs, and chemical costs. The result is a customized mill-wide strategy that balances quality targets with cost efficiency.

OPERATOR-FOCUSED, DECISION-SUPPORT ENVIRONMENT:
It supports operators by shifting their focus from manual adjustments to higher-level operational decisions. Intuitive Metris views display production, cost, and quality KPIs. Dashboards highlight performance improvement opportunities, while high-level plant operation views provide immediate visibility of constraints and operating modes across the mill.

INTEGRATED INFORMATION FOR OPERATIONS AND MAINTENANCE:
Automation data and asset reliability information are summarized in a single interface. Operators can directly share relevant insights with maintenance teams, supporting faster and more informed decisions. Mobile applications enable visualization of key information both in the control room and in the field.



Measurable values to customers

Digitalization is not just about technology, it's about measurable results. ANDRITZ MWO delivers tangible improvements across key performance areas, helping mills operate more efficiently, reliably, and profitably.

What can you achieve:



UP TO 2% PRODUCTION INCREASE



UP TO 2% COST REDUCTION



UP TO 5% QUALITY LOSSES REDUCTION



UP TO 2% MILL AVAILABILITY INCREASE



UP TO 0.5% MAINTENANCE COST REDUCTION



UP TO 10% PRODUCTIVITY INCREASE



UP TO 1% REDUCTION IN EMISSIONS



UP TO 3% REDUCTION IN WATER USAGE



UP TO 3% INCREASE ENERGY EFFICIENCY

CONTACT US FOR MORE INFORMATION

Advancing autonomous operations is our vision and is becoming an integral part of industrial processes. ANDRITZ is at the forefront of this transformation, leveraging digital innovations along with deep operational and technical expertise to improve process efficiency, quality management, and production reliability and availability.

We focus on developing autonomous pulp mills and process optimization, to support efficient and sustainable operations by combining automation, electrification, intelligent instrumentation, and digitalization to create measurable value throughout the full life cycle and the entire value stream.

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