

REMOVE THE **HIDDEN VARIABLE**



CHALLENGE:


VARIATION IN THE PAPERMAKING PROCESS CAUSES ISSUES

Of all the variables in your process that impact drainage stability—from feedstock quality, refining, and retention variations to weight and strength, drainage speeds and steam usage—**entrained air has the greatest ability to disrupt everything**. When it goes up, drainage slows, defoamer gets overused, and steam needs to be increased, leading to potential breaks, pinholes, moisture variations, and other defects.

But pausing operations to root out problems isn't an option. Growing demand for paper packaging products means mills have to push their processes to go faster and increase output—inadvertently creating more entrained air and foam in the process. On top of that, customers are asking for more and different products.

This dictates more challenging grades with higher specifications (e.g., lighter-weight, stronger packaging), which require more precision and discipline from your team at every step.

But as the variables shift up and down, many of your **operators prefer to switch into manual control, which can increase process variability**. If they are getting an entrained air measurement into the DCS, they often don't trust its accuracy or see a single data point as more important than any others. They rely on their experience and instincts, doing manual tests and running trials—for example, dosing more chemicals to knock down visible foam or strengthen fiber bonds. But the more that's added to this "matrix," the more it costs in chemicals, energy usage, and man hours to try to balance it all.



Your mills are **living with variability that directly impacts output quality**—which could endanger customer relationships and your ultimate revenue opportunity.

AUTOMATICALLY UPGRADE YOUR CONTROL ALGORITHMS



Thanks to Ackumen™ ECHOWISE® Pro sonar-based technology, you can **confidently measure entrained air without drift**, so you can more clearly troubleshoot and fix variations that aren't caused by air.

Typical entrained air sampling methods are invasive and infrequent, requiring direct access to your feedstock, which can introduce drift and create problematic gaps between measurement and action. As a result, many operators may mistakenly downplay the importance of air in their control strategy

With ECHOWISE Pro, you will **upgrade your control algorithms—automatically**. ECHOWISE Pro works non-invasively, measuring entrained air via a reliable, sonar-based calculation, so there is no direct sampling or interfering with your stock.

What's more, ECHOWISE Pro reads air every 1.5 seconds and feeds that data directly to your DCS or dashboards on your computer, phone, or tablet. As a result, you're able to create centerlines to compare with other process values—and bring your control directly into phase with your real-time operations.

With more frequent and accurate measurements, you'll be able to **remove air's influence on your paper**—reducing downgrades, breaks, pinholes, and more—so you can optimize both quality and production. When you do, you'll be in position to implement automated control—relying on tighter algorithms that drive overall machine efficiency (OME) improvements across your entire asset base.

MAINTAIN YOUR CENTERLINE REGARDLESS OF VARIATIONS



When your team sees how consistently the system runs using Ackumen™ ECHOWISE® Pro auto-control capabilities, you'll **greatly reduce the temptation to run in manual**—and also reduce many of the variables that have stalled performance in the past.

With feedstock quality and grade requirements changing multiple times per shift, your operators often try to control entrained air through manual adjustments, such as adding defoamer. Yet while these steps may work in the moment, they can cause downstream issues, including excessive defoamer usage, if not readjusted for each grade.

With ECHOWISE Pro, you will **maintain your centerline regardless of operational variations**. ECHOWISE Pro can trigger an automated, continuous control response with the defoamer application to proactively keep entrained air levels within your defined performance parameters.

This is important because air impacts your drainage capability, which then impacts your efficiency and paper quality.

For example, you might need to control at 1% entrained air for one grade and 2% for another. By taking advantage of ECHOWISE Pro's **closed-loop control**, you'll not only be more precise about hitting specific targets across your runs; you'll hold to them, so you can **more easily achieve your output goals**. No more worrying about visual foam, human errors, or different operator tendencies.

REMOVE THE HIDDEN VARIABLE

When you partner with Buckman, you'll be able to minimize air's influence on the papermaking process to achieve the level of control that's essential for operating like a mill of the future.

Specifically, you'll be able to:



Automatically
upgrade your control
algorithms



Maintain your
centerline regardless
of variations

Join leading organizations in operating more consistently and predictably to achieve higher-quality production at a lower cost.



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