VOITH

nextlevel

by Voith Paper — N° 12

together

08 Successful
The new production line hitting record-breaking milestones

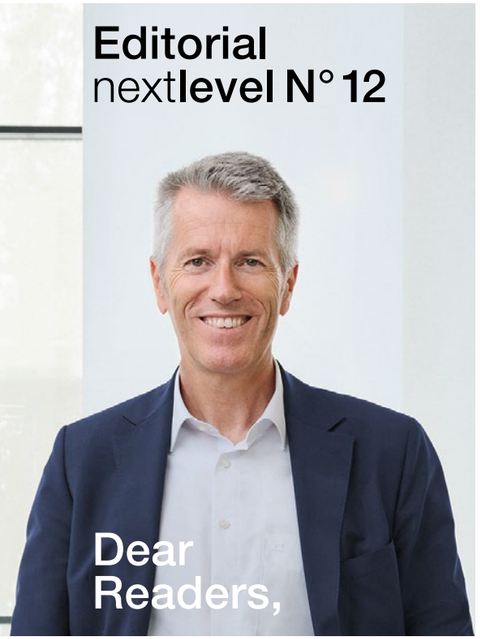
22 Sustainable
Decarbonization through customer-centric solutions

30 Future-ready
Empowering papermakers with the MillOne ecosystem



As a team – always ahead

Editorial
nextlevel N° 12

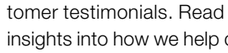


Dear Readers,

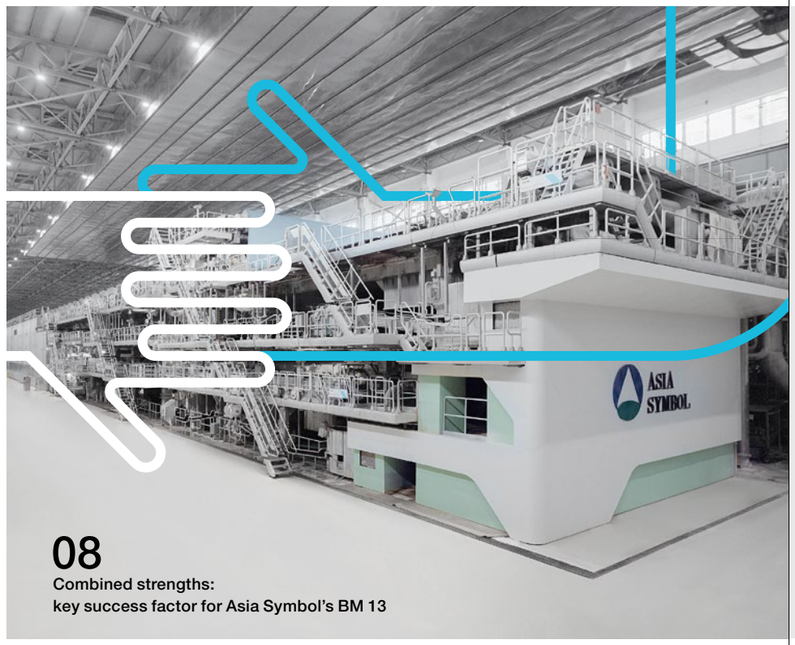
This issue shows what's possible when we work together toward common goals. What shines through is our desire to deliver tangible benefits for papermakers. Working side by side, we strive to earn your trust and solve challenges together. This is the real achievement of our shared commitment: making papermaking more efficient and sustainable. I'm especially proud of the customer testimonials. Read the personal insights into how we help drive their success and deliver a competitive edge – across all regions and paper grades.

I invite you to explore how we're decarbonizing papermaking with integrated, connected and customized solutions. See how we make every second of a maintenance shutdown count and achieve record-breaking milestones with papermakers around the world. Finally, our cover captures what brings it all together: the people behind the scenes working on our MillOne ecosystem. Their passion is reshaping the way paper mills empower their teams. Find out how our collaborative partnerships are making an impact in our first-ever feature on MillOne. I'm sure there will be many more to come.

Enjoy the read and let's move forward together!



Andreas Endters
President & CEO Voith Paper



08
Combined strengths: key success factor for Asia Symbol's BM 13

Contents

Zoom

04 A Breakthrough Design
Inside the cutting-edge innovations of the MasterJet 4Tec headbox

News

06 A Quick Round-Up
Highlights from the world of Voith Paper

Full-line supplier

08 Unstoppable Together!
Six secrets to the 27-year partnership with Asia Symbol

12 Faster, Wider, Higher
The teamwork behind Owens Corning's record-breaking glass mat production line

14 Close Collaboration Counts
Four papermakers in Europe and Turkey look to the future with Voith Paper

16 Performance Highs
Huaqiao Fenghuang PM 6 marks a new performance milestone

Sustainability

18 What's New in Wear Parts?
Martin Bassmann shares why innovative wear parts drive sustainability and performance

22 Solid Building Blocks
How joined-up, tailored solutions are decarbonizing papermaking

28 Pure Electric Tissue
The world's first fully electric high-speed tissue machine goes live for Fortissue

Efficiency

30 All in One
How MillOne is reshaping operations, collaboration and upskilling for Mondi and Sun Paper

36 Risks Down, Production Up
The smart winder upgrade solutions powering up production and safety

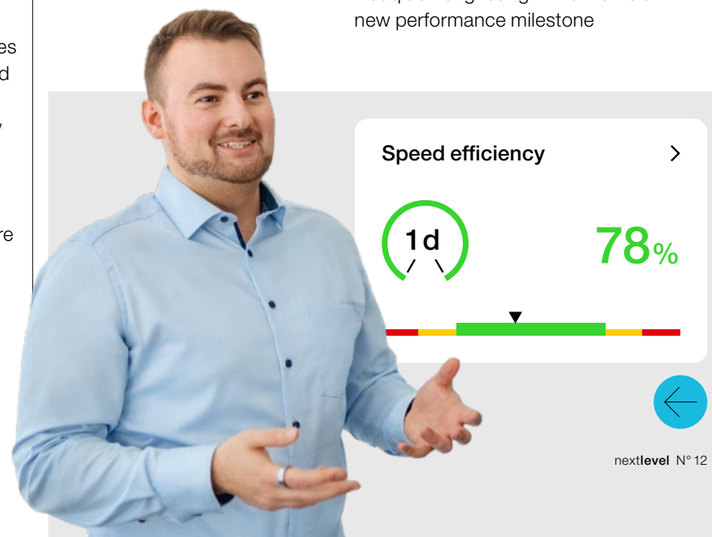
39 Unplanned Shutdowns Down to Zero
Next-level teamwork with Marusan Paper secures optimal uptime

40 Lessons Learned
Kuantum Papers on the challenges and promising results of their digital journey

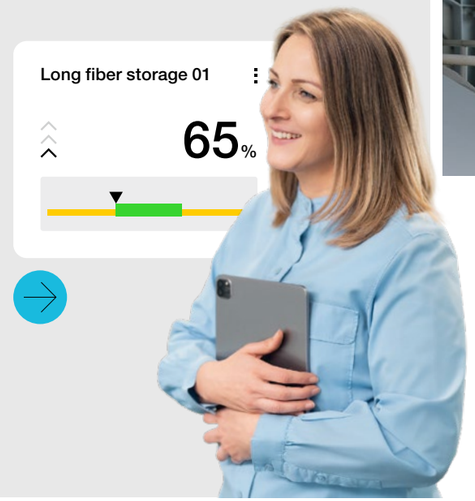
42 Shutdown!
The seven steps to higher availability and productivity for Klabin

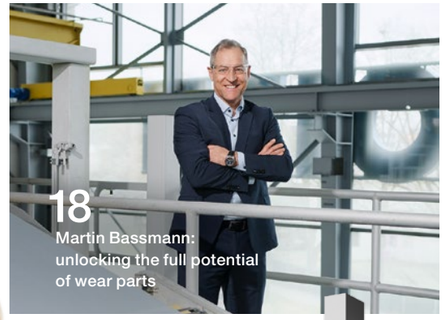
Q&A

46 Collective Impact
Christin Noack on collaborative trends in sustainable flexible packaging



30
The MillOne ecosystem: connecting the dots, empowering papermakers

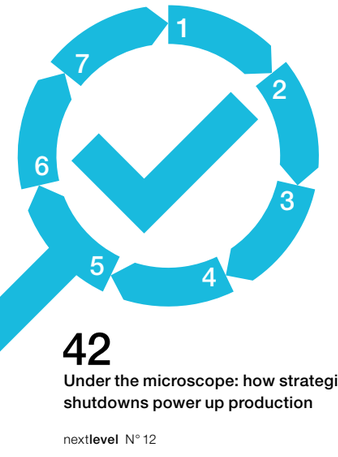




18
Martin Bassmann: unlocking the full potential of wear parts



22
Maximum energy savings with innovative technologies and engineering expertise



42
Under the microscope: how strategic shutdowns power up production

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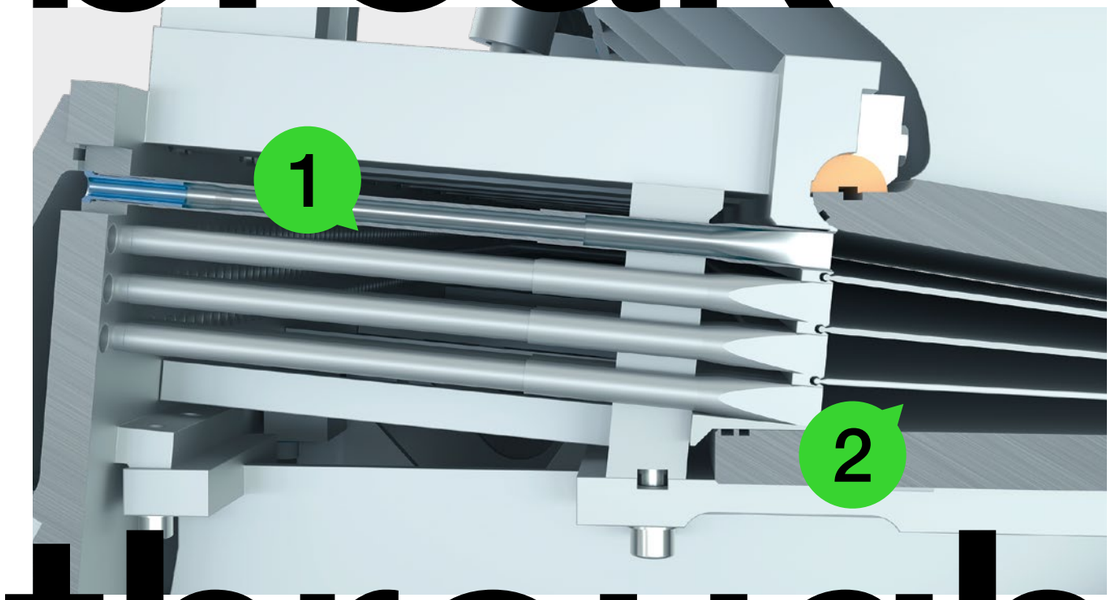
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A break— through design

With its optimized turbulence generator and redesigned lamella holder, Voith's new MasterJet 4Tec sets the highest standards in headbox performance and exceptional, streak-free sheet formation.



Sheet formation and dimensional stability are two of the most critical quality parameters in papermaking. The headbox, especially the turbulence generator and lamella technology, significantly impacts both. Flow disturbances at the turbulence generator outlet can create vortexes, leading to streaky patterns in the paper sheet. Such irregularities can cause serious quality issues, including uneven visual appearance, poor printability, low dimensional stability and cockling. During the development of the MasterJet 4Tec, Voith focused on further reducing these paper defects. By following a systematic approach, every detail of the turbulence tube and the lamella holder was optimized. The minimized design of the lamella holder reduces the step-back at the tube outlet by 50 percent, which is a significant achievement. At the same time, it still allows long lamellas to end close to the nozzle outlet – unlike many alternative solutions – thereby maximizing the quality benefits of the lamella technology.

The results of extensive trials with various furnish types and operating parameters on a pilot headbox were striking. Modern image analysis revealed that, depending on stock consistency, streaky structures were reduced by up to 70 percent. Moreover, the benefits have been repeatedly proven in full-scale production. At Brigl & Bergmeister, a leading Austrian manufacturer of label papers, the MasterJet 4Tec is installed on a three-meter-wide paper machine. "Right from the start, we had very good cross profiles," confirms Josef Goessnitzer, Production Manager at Brigl & Bergmeister. "And the exceptionally smooth jet was impressive."

Key customer benefits

- Streak-free sheet formation with excellent visual appearance
- Consistent strength properties
- Perfect sheet flatness and no cockling
- Outstanding printability
- Best paper conditions for conversion

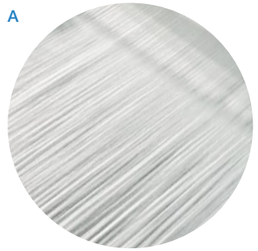
1
Turbulence generator
Optimized to ensure an exceptionally smooth jet.

2
Lamella holder
Redesigned to reduce the step-back at the tube outlet by 50 percent.

Real-world impact

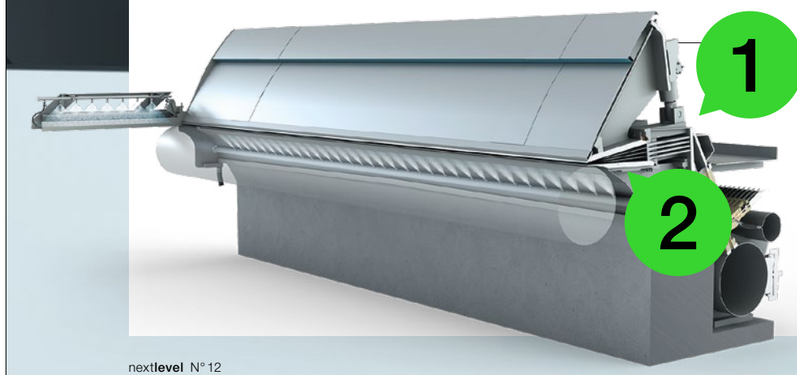
At one mill, visible formation streaks [A] were a common issue. After installing the MasterJet 4Tec, the mill now benefits from exceptional jet homogeneity and outstanding, streak-free sheet formation [B].

A



B

Reduction of streaky structures by up to 70%



The MasterJet 4Tec features additional innovations to ensure ease of operation and energy efficiency. For instance, by eliminating the recirculation line in the cross-distribution header, extensively redesigning the pulsation damper and optimizing the turbulence tube, a six-meter-wide MasterJet 4Tec could achieve overall annual savings of €103,000 in energy consumption.*

*Calculations based on 1,000 m/min, 80,000 l/min, 0.12 €/kWh

Rocking the Voith Paper Wear Parts Roadshow across Asia

The Voith Paper Wear Parts Roadshow continues to bring cutting-edge innovations and services directly to papermakers, providing an immersive and hands-on experience for mill operators and management. During the first tour in China, the show truck stopped at over 40 customers, including Shanying Zhejiang. “The roadshow not only highlighted a wide range of consumables and spare parts but also provided valuable solutions to key pain points,” says Chen Jiwei, Director of Operation at Shanying Zhejiang. Given the positive customer response, even more visits are planned for the second tour. In parallel, the Indonesian tour has already visited eight manufacturers, while in Japan, customers have enjoyed a unique experience at the Voith Paper IHI Technology Center in Motomiya. Each tour offers plenty of opportunities for papermakers to explore Voith innovations that boost efficiency and sustainability in papermaking.

Smart upgrade for superior fiber consistency control

MEK STRATUS, BTG’s most powerful shear-force consistency sensor ever, delivers superior fiber consistency measurements for pulp and paper production. As the sixth generation of BTG’s rotating transmitters, with over 50,000 units sold worldwide, it builds on proven reliability and introduces cutting-edge upgrades. Built to last and easy to install, this advanced rotating inline transmitter eliminates the need for sealing water, significantly reducing maintenance. With twice the torque of traditional models, MEK STRATUS ensures precise fiber consistency measurements even in challenging conditions. But real-time consistency control is only valuable if the data is easily accessible. Designed for modern, data-driven mills, operators can access performance insights anytime and anywhere. The BTG Status Ring provides instant visual feedback, while the BTG STRATUS app and Field Interface enable remote monitoring and control. With cloud connectivity, BTG’s team can remotely monitor, calibrate and troubleshoot the transmitter, minimizing downtime. Marco Picconi, Mill Manager at A. MERATI & C. – CARTIERA DI LAVENO, a leading Italian producer of recycled paperboard, confirms: “MEK STRATUS gives us real-time insights at our fingertips. The digital features enhance consistency control, helping us optimize production more easily with greater accuracy.”

News from the world of Voith Paper

Designed for maximum reliability and connectivity: the new OnQuality.Scanners

- Reduced total cost of ownership
- Simplified maintenance
- Maximized sensor lifetime
- Seamless integration with MillOne

Interested in the next generation of QCS in papermaking?

Voith’s commitment to continuously invest in innovation comes to life with the next-generation frame for OnQuality.Scanners. Developed using the latest advances in industrial design, the new frame reduces total cost of ownership and simplifies maintenance. By improving accessibility and protection for delicate high-value sensors, the frame ensures easier servicing and maximizes sensor lifetime. “Our new frame model is robust, highly reliable and designed for hassle-free maintenance,” says Daniel Pereira, Product Manager QCS at Voith Paper. “This allows papermakers to focus on the continuous improvement of their processes and efficiency.” The OnQuality.Scanners system operates with the updated ComCore software, which features advanced control capabilities and is fully compliant with international cybersecurity standards. Seamless integration with Voith’s MillOne leverages AI resources and Voith’s range of virtual sensors and advanced process control solutions to optimize production processes and drive mill digitalization. The first installation will boost the operations of a leading German packaging paper manufacturer in 2025.

07 Page 16



#full line supplier

Innovative together: creating holistic papermaking solutions.

Unstoppable together!

27-year partnership

11 months from start-up to FAC

For more personal insights, watch the video.

No single person has all the answers. But success comes down to more than the old cliché of “teamwork makes the dream work.” The 27-year partnership between Asia Symbol and Voith Paper shows what close collaboration is capable of: the record-breaking Rugao BM 13.

Up and running smoothly in record time, Asia Symbol's BM 13 sets a benchmark for future projects. In under 11 months since the start-up of the state-of-the-art production line in Rugao, China, all contractual obligations were met and the Final Acceptance Certificate (FAC) signed. This was an important milestone for Asia Symbol and Voith Paper, as well as cause for celebration. "Achieving FAC in just 11 months demonstrates the professionalism of Voith's full-line solution," says Xia Jigang, Board Operations Director at Asia Symbol (Jiangsu). "This further strengthens our competitive advantage in high-quality white folding boxboard production. We are very grateful for the full support and collaboration of the Voith team."

This FAC record came swiftly on the heels of other milestones. Only eight months after start-up, the Rugao BM 13 reached the highest design speed of 1,400 m/min, and production now exceeds design capacity for products in the 300–400 gsm range. Moreover, the Rugao BM 13 set a nine-day no-paper-break record early on and maintains a high A-grade production rate of 98 percent. So, how did the teams achieve so much in such quick succession? For René Bauer, Project Manager at Voith Paper, the answer comes easily. "I'm convinced that the success was only possible because of the close and cooperative partnership between the Voith and Asia Symbol teams," says Bauer. Strong partnerships don't happen by chance. In this case, six factors made a difference.

#1

Combined strengths set standards

Successful teams thrive on competence. With Asia Symbol's papermaking expertise and Voith's proven track record as the leading full-line supplier, the Rugao site benefited from industry-leading know-how and technology. From planning to start-up and aftermarket services, Voith provided seamless, end-to-end solutions. "Our decision to select Voith as a full-line supplier has been immensely beneficial," continues Jigang.

"Voith ensured a stress-free and reliable project management experience for us, expertly overseeing each installation and quality control point."

#2

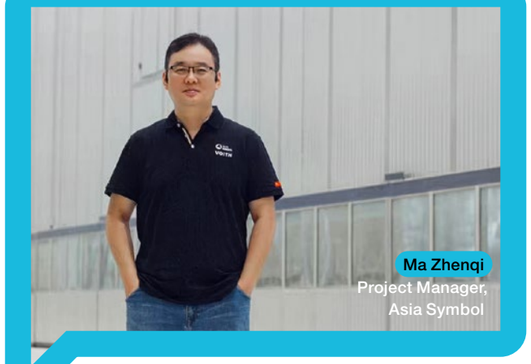
Trust builds confidence

Trust is the cornerstone of any collaboration. It's also the glue that holds high-performing teams together and drives progress. Throughout the 27-year partnership between Asia Symbol and Voith, both teams could always rely on each other to commit to tasks, meet tight deadlines and pursue excellence, which cemented the trustful relationship. "We have great trust in Voith," says Jigang. The teams have an incredible bond, believes Ewald Nigl, Site Manager at Voith Paper. "We worked very closely together with trust and respect," says Nigl. "We became friends and even family."

#3

Shared vision fuels progress

A shared commitment is key. In this case, the goal was high-quality, sustainable production. "Quality is our top priority," stresses Cui Jun, Project Director at Asia Symbol. "Our goal is to deliver the best quality, so that our customers see us as the best." Voith delivered on both fronts. "Rugao BM 13 consumes less water, electricity and gas compared to machines in the same category," notes Jigang. The Rugao base is the industry's only mill with zero wastewater discharge – made possible with Voith's support. What's more, resource-efficiency and quality were built into the design of Rugao BM 13, as Sebastian Blaesing, Product Manager Process Technology Paper at Voith Paper, makes clear: "We implemented several measures and tools to enhance machine performance and paper quality, including our ProRelease+ stabilizer boxes to boost runability."



Ma Zhenqi
Project Manager,
Asia Symbol



Xia Jigang
Board Operations Director,
Asia Symbol

"We have great trust in Voith."

#4

Communication drives success

Open and transparent communication is the basis for smooth project execution. For instance, having one main contact person at Voith for Asia Symbol ensured the right information flowed to the right people at the right time, with no information overload. For Ma Zhenqi, Project Manager at Asia Symbol, this was a key advantage for Rugao BM 13: "Voith ensured a stress-free and reliable project management experience for us, expertly overseeing each installation and quality control point."

#5

Forward-thinking creates opportunities

The best teams push for excellence and see challenges as opportunities. "Throughout, Voith demonstrated exceptional professionalism and delivered swift, efficient solutions," highlights Jigang. Moreover, planning ahead helped lower long-term costs. "Components such as the shoe sleeves are replaced every 10 to 12 months, and the felt every two months," says Shen Haoping, Equipment Manager, Asia Symbol. "Compared to similar machines, this significantly reduces production operating costs."

#6

Strong team spirit drives success

Intercultural understanding is essential for building a cohesive team. Voith's local presence was pivotal to the strong team spirit. Both teams were always ready to swing into action. "The Voith team provided us with the highest quality and service," concludes Jun. "Whether in on-site installation, commissioning, production process management or technical applications, Voith demonstrated a high level of professionalism and technical expertise."

"The success of the Rugao BM 13 project stems from the strong, cooperative relationship between Voith and Asia Symbol teams," says Xiaodong Gong, Senior Project Manager at Voith Paper China. "With timely, open communication and a focus on effective problem-solving, both sides worked pragmatically and professionally, creating a mutual understanding that has been key to smooth project advancement and ongoing optimization."

While it's true that no single person has all the answers, one person sums up the partnership best, and that's René Bauer. "The team spirit between Asia Symbol and Voith is unlike anything I've ever experienced before. We can all be incredibly proud of what we've achieved at Rugao – and of what we are certain to achieve together in the future."

Rugao BM 13
China

516 meters
total length from headbox to winder

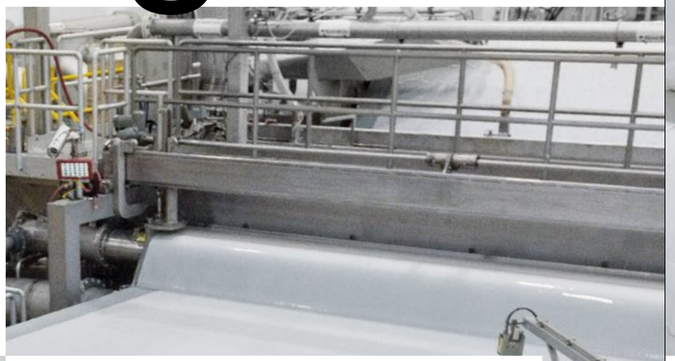
1,000,000 tons
annual production capacity

8,900 mm
wire width

170 to 400 gsm
basis weight of high-quality white folding boxboard

Faster, wider, higher!

The world's fastest, widest and highest-performing glass mat production line is now up and running. At the heart of this record-breaking machine is Voith's cutting-edge technology and engineering expertise. Wim Weeres, Technical Director of nonwovens business at Owens Corning, shares his insights on what makes this project so remarkable.





1

width
5.5 m

design speed
510 m/min

1
Size, speed and superior results: a game-changer for the nonwovens market.

Wim Weeres, you've been part of this record-breaking project from the very start to the takeover. What's been the most satisfying part of seeing it all come together?
Personally, I was amazed by the exceptionally smooth and efficient commissioning and start-up phases. I've been involved in many large-scale projects, but I have never seen a start-up this fast and this easy. It's been a unique experience.

Owens Corning – and you yourself – have been working with Voith for nearly 30 years. What do you think makes this partnership so successful?
Both teams are highly skilled and share the same mindset. The Voith engineers have exceptional drive and expertise. At Owens Corning, we have a small but determined team. All of us are relentlessly focused on getting things done in the best possible way. Things can go wrong, but if they do, there is never any finger-pointing. We fix it together quickly and move forward. Over the years, our relationship has evolved into a true partnership. We have an extremely collaborative and cooperative way of working together – never adversarial. Given the significant investments involved in these projects, both companies recognize the value of strong long-term partnerships. And given the choice, I prefer not to go elsewhere.



2

This new line is packed with cutting-edge Voith technology. If you had to pick one feature that excites you the most, what would it be and why?
The standout feature is the HydroFormer. It gives us the industry's fastest, widest and most productive asset of its kind. With a width of 5.5 m and design speed of 510 m/min – which is fast for nonwovens – it has an annual production capacity of 90,000 tons.

You also installed a Voith prototype in this line. Why did you go with the FiberDry?
The FiberDry is a prototype drying concept, but it was built on Voith's proven papermaking technology, which gave us confidence in its performance. Also, having one supplier for multiple critical components reduced our workload and simplified processes. I don't know if I would have trusted anyone else with a dryer of the size we needed. It's a beast and it's impressive.

Looking ahead, where do you see the glass nonwovens market heading?
The glass nonwovens market, which includes the roofing segment and other building envelope applications, continues to grow. Even during economic ups and downs, the demand for glass nonwovens products remains relatively stable as it still drives material conversion. Specific to roofing, Owens Corning's roofing division has been a stellar performer, and we expect this trend to continue.

How does this project prepare Owens Corning for what's next?
In the past, our markets suffered supply constraints because of the limited availability of glass mat. This investment changes that by ensuring a stable, cost-competitive supply of materials, allowing us to better meet the increasing demand. With this new production line, we are well positioned to support our most profitable division without the risk of production bottlenecks. At the same time, it allows us to continue to drive conversion to glass nonwovens in residential and commercial building envelope systems across North America and Europe.

Together

Working with one trusted supplier for multiple critical components was a key advantage for Owens Corning. Voith not only streamlined operations but also eliminated the complexities of managing multiple vendors, ensuring a more efficient and cohesive commissioning and start-up process.

3



2
The 90,000-ton annual capacity at Fort Smith eliminates supply bottlenecks and drives growth.

3
"I have never seen a start-up this fast and this easy."
Wim Weeres, Technical Director of nonwovens business, Owens Corning

annual production capacity
90,000 tons

Background check
Owens Corning is one of the world's leading suppliers of residential and commercial building materials. The company's brand-new Fort Smith production line in Arkansas, U.S., produces glass nonwovens for roofing shingles and other innovative glass nonwovens for building envelope applications on what is now the widest, fastest and most productive glass mat machine in the world. Voith supplied and commissioned the pulping, forming, binding and drying sections, as well as a comprehensive Papermaking 4.0 and automation package to increase efficiency, product quality and machine availability.

Close collaboration counts

Building on decades of successful collaboration, four leading papermakers chose Voith Paper as their full-line supplier for their most recent ambitious mill transformations in Europe and Turkey. Here, they share key highlights from the build-up to the start-ups and full-scale production.

Norske Skog



PM 1 conversion
Major transformation of the Golbey industrial site with an annual production goal of 550,000 tons of recycled containerboard.

“Voith’s proactive troubleshooting and flexible approach have kept the PM 1 conversion moving forward to our schedule. We work closely together with a common purpose and a good relationship.”

Vassart Yan
Box Project Manager, Norske Skog Golbey

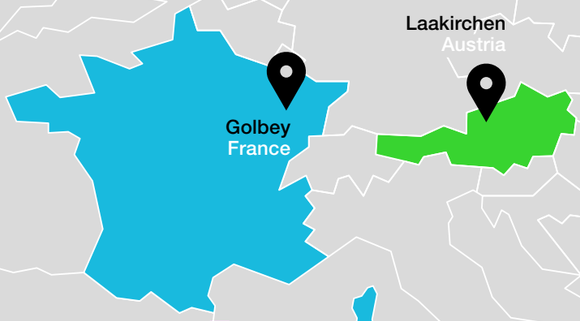
Heinzelpaper Laakirchen

PM 11 conversion
Annual production capacity to be converted from 330,000 tons of graphic paper to 470,000 tons of containerboard.

“This extensive rebuild is proof of our vision and the strength of our partnership with Voith. The high-speed, high-quality PM 11 will set a hard-to-beat benchmark in efficient and sustainable papermaking.”

Dr. Thomas Welt
CEO, Heinzelpaper





When papermakers invest in new production lines, extensive rebuilds or mill conversions, close, collaborative partnerships are pivotal to the successful start-up and long-term profitability. Every high-tech start-up involves many steps, hundreds of people and thousands of components – as well as inevitable challenges along the way. With Voith Paper on board as a full-line supplier, each project is marked by the same unwavering commitment to quality, timeliness and customer success. Although the goals of a start-up are always unique, Voith approaches them all with the same level of commitment, integrating state-of-the-art technology and applying domain expertise to futureproof high-quality, efficient and sustainable production lines.





“We have been working in multiple projects with Voith Paper, the latest with our new cartonboard line in Oulu, Finland. The project has been carried out in good co-operation with Voith and Stora Enso. In safety, Voith has an exceptional track record, which is a great achievement considering the size of the project.”

Jari Hyönä
Project Manager, Stora Enso

Stora Enso

PM 6 rebuild
Comprehensive rebuild with an annual production goal of 750,000 tons of premium quality folding boxboard and coated kraft back for the global market, which will be the highest production capacity in Europe.



2.5 million tons

Estimated combined annual production capacity of the 2025 start-ups in Europe and Turkey.

Modern Karton

PM 6 new production line with BlueLine stock preparation
The annual production capacity goal of the high-speed XcelLine PM 6 machine is 640,000 tons of recovered corrugated cardboard base paper.

“Voith has been a strong and reliable partner and delivered outstanding work and support on multiple successful projects. This latest venture demands intensive cooperation and constructive collaboration between our teams. Voith’s commitment and technical expertise have been instrumental in keeping the project on track.”

Tamer Zengin
PM 6 Project Manager, Modern Karton





Performance highs

Huaqiao Fenghuang PM 6
BlueLine OCC line

2,200 tpd
production capacity

Having fully achieved all performance guarantees in just over two months since commissioning, Asia's largest BlueLine OCC line is up and running smoothly for Sichuan Huaqiao Fenghuang.

As Huaqiao Fenghuang PM 6 celebrated its first anniversary, the Voith Paper XcelLine paper machine had already achieved stable operation and reached its design speed of 1,300 m/min. A key success factor is the high-performance BlueLine OCC line. With a daily production capacity of 2,200 tons, it's the largest stock preparation line of its kind in Asia and showcases the portfolio's outstanding energy efficiency and reliability. "Currently, the energy consumption of the BlueLine OCC line is maintained at 70 kWh/ton, and the fiber loss is only 0.6 percent," notes Peng Yejun, Production Manager at Huaqiao Fenghuang. Since its commissioning in August 2023, this record-breaking line completed performance tests in just over two months and fully achieved all performance guarantees in the contract. This achievement underscores the close and exceptional collaboration with Voith.

"Since start-up, this BlueLine OCC has maintained stable operation," notes Jia Tinghe, Head of Stock Pulp at Huaqiao Fenghuang. "Its low energy consumption, low fiber loss and compact process design have significantly reduced our operating costs." A notable highlight for Tinghe is Voith's LC-Cleaner system that is based on the unique EcoMizer. This technology has significantly increased operating consistency and reduced energy use by 30 to 40 percent. "Particularly in the cleaning and fine screening systems, Voith's equipment has performed exceptionally well, greatly improving stickies removal efficiency," adds Tinghe. Specifically, this line achieves a stickies removal rate of 97.8%, while in the long fiber line, it exceeds 92%. The resulting high-quality stock is crucial for the stable operation of the PM 6 – which produces around 500,000 tons packaging paper in the range of 90 to 170 gsm annually – and ensures high-quality paper. "These outstanding results not only reduce our manufacturing costs but also enhance our market competitiveness," concludes Yejun.



Peng Yejun
Production Manager,
Huaqiao Fenghuang



Jia Tinghe
Head of Stock Pulp,
Huaqiao Fenghuang

1 Three energy-efficient InfiltraDiscfilter HiCon units provide excellent filtrate quality.

From dump tower to final stock:

70 kWh/ton
energy consumption

0.6%
fiber loss

97.8%
stickies removal efficiency



17 → 28

Page

#sustainable paper making

Greener together: transforming papermaking for a better future.

what's new in wear parts?



In this wide-ranging interview, Martin Bassmann, President of Fabric & Roll Systems, shares why Voith is uniquely positioned to meet the rising demand for sustainable wear parts. Innovative solutions and a strong collaborative approach ensure customers increase performance, reduce environmental impacts and unlock untapped potential along the paper machine.

Martin Bassmann, you're responsible for ensuring that Voith's industry-leading "Papermaking for Life" sustainability program is implemented across fabrics, press sleeves and roll covers. This is your opportunity to update us on your team's progress. What's new in wear parts?
There's so much happening, but that's nothing new for us. We're always working on the continuous improvement of wear parts. Our fabrics, press sleeves, roll covers and tailored service options are all about empowering papermakers to minimize unplanned shutdowns and run smoother operations. Through a targeted mix of incremental optimizations and truly innovative solutions, we're maximizing energy-efficient performance and extending product lifetime. Papermakers benefit from higher overall equipment efficiency and lower operational costs.

How has the product portfolio changed more recently?
Our R&D teams are using innovative, patented materials to expand our portfolio with high-performance products that have the lowest possible environmental impact. We achieved two important milestones with the launch of AiroGuide Tune Green, the first CERTCO-certified guide roll cover made with bio-based materials, and SolarFlow Green, the first DIN CERTCO-certified bio-based suction press roll cover. We bring high performance while reducing emissions in our production. As a result, we secure a reduction in Scope 3 emissions for papermakers.

On the digital side, our portfolio is impressive. New digital products and services are essential for the efficient use of wear parts to minimize wear, reduce waste and lower costs. One highlight is our TrackLight AR, which uses augmented reality to provide a virtual window inside the suction roll. With this smart device, papermakers can make optimal adjustments to key internal components to maximize dewatering, save energy and boost runability. It's transforming the way inspections are carried out and leading to greater machine availability.

"We are a proud pioneer of circular economy models in papermaking."

World's first CERTCO-certified, bio-based solutions

AiroGuide Tune Green

SolarFlow Green

All innovation is a trial-and-error process. What can you tell us about Voith's latest field trials with the closed-loop recycling of wear parts?
We are a proud pioneer of circular economy models in papermaking. One cradle-to-cradle solution now incorporates recycled yarn made from the used press felts from our customers' sites and unavoidable production waste from our own sites. This recycled yarn is used to produce new high-performance press felts at our low-carbon production site in Högsjö, Sweden. These recyclable press felts have the same performance as felts made from virgin material.

Sustainability is not just about how fabrics, press sleeves and roll covers are produced or recycled. Papermakers also need wear parts that save energy and boost efficiency in their own production sites. What are the most important Voith innovations that support the sustainability goals of your customers?
Our innovations work in perfect harmony. In the press section, the powerful combination of QualiFlex press sleeves, Infinity press felts and SolarFlow suction press roll covers delivers on performance. When we boost dry content after press, our customers significantly reduce energy consumption and lower carbon emissions in the drying section.

And then there's HydroSeal, an innovation with a massive impact. It's a sophisticated seal strip and lubrication system that drastically lowers water consumption in suction rolls in forming and press sections. As well as saving water, it also increases the efficiency of drive operation, which reduces energy costs. Since HydroSeal was launched, we've saved water for our customers to the tune of over 91 million m^3. That's an incredible achievement.

In terms of fabrics, we're pushing the limits of innovation with our in-house expertise and yarn production. For instance, we've developed a new smart forming fabric using specially engineered material and a groundbreaking weave pattern. The unique design significantly slashes the start-up energy peak of a newly installed fabric, bringing it quickly down to the level of normal energy consumption. We're currently working together with papermakers on field trials and are very satisfied with the results.

Why is it important for Voith to collaborate with customers on innovations?
Real-world collaborations are necessary to tackle and solve future challenges. We have deep domain expertise and understand the process

→

from every angle. But real innovation happens when we combine our knowledge with customer insights from their operations. This direct link allows us to apply an outcome-oriented approach to innovation and fine-tune our solutions to support the long-term success of our customers.

The best innovations often take papermakers by surprise. Is there one that stands out?
That would be our HighPerformance Press solution. This is a tailored combination of customized Infinity press felts and QualiFlex press sleeves with a finely tuned NipcoFlex shoe and press concept. The dewatering performance is far superior. It increases the dry content by up to three percent, enabling papermakers to ultimately save up to 12 percent in steam consumption in the dryer section. Our customers have been pleasantly surprised by the positive impact of this easy-to-install solution.

You mentioned QualiFlex again there. This fully customizable press sleeve portfolio is a favorite of papermakers around the world. How do you explain its popularity?
QualiFlex has earned its reputation by consistently delivering reliable performance, even in the most demanding conditions. Our team of passionate innovators keeps it ahead of the curve with a combination of advanced MicroCT analysis, lab testing, test rigs and real-world field trials, ensuring it meets the needs of every type of paper mill. The biggest advantages come from the patented material and customized designs, which help maintain a stable void volume over a longer service life. This consistency is key to efficient water flow, leading to better dewatering in the press section and higher dry content after press. It's this perfect balance of durability, efficiency and performance that makes QualiFlex a trusted choice for mills worldwide.

Let's talk digital for a moment. What tools and solutions are you most excited about right now?
There's a lot going on in the digital space. Our growing portfolio of digital tools is focused on direct process optimization and includes tools like OnQuality.FormingSens, SensorBlade and our Q-Fit camera – the only service tool that checks forming fabric wear during machine operation. We also have NipSense and NipDynamics. The latter is a new tool for real-time monitoring of the nip profile, which plays a pivotal role in moisture management.

Through digitalization and the Voith MillOne Operations Management System, we're helping our customers tackle know-how loss and support less experienced operators by building knowledge hubs that everyone can easily access. In addition, we're developing virtual sensors that provide papermakers with actionable insights in real time from relevant data. With MillOne, we're bringing together internal and external data, processes and insights, which unlocks maximum value for our customers and can drive efficiency like never before.

As for our own production processes, we're connecting machines, sensors and devices to allow real-time data collection, greater transparency and deeper analytics. This connectivity significantly improves performance and continuously enhances the quality we deliver. One particularly exciting development is the implementation of digital production cards, which helps us eliminate the last remaining paperwork in our factories.

What kind of services do you provide around digitalization?
We support papermakers not only with our products but also through expert technology consulting from our team of papermaking specialists. This includes comprehensive machine audits, section-specific evaluations and energy-efficiency assessments. By analyzing both individual machine sections and complete production lines, we help mills identify optimization potential, improve efficiency and enhance overall performance.

What's the one big challenge in papermaking you'd love to solve?
In general, we need to make papermaking more sustainable and minimize energy use, water consumption and fiber loss. I see the Voith MillOne integrated ecosystem as a key enabler in this regard. It provides powerful insights into a mill's performance and the actions that optimize the use of wear parts. This puts us in an excellent position to solve the biggest challenges in our industry and drive greater sustainability in mills around the world.

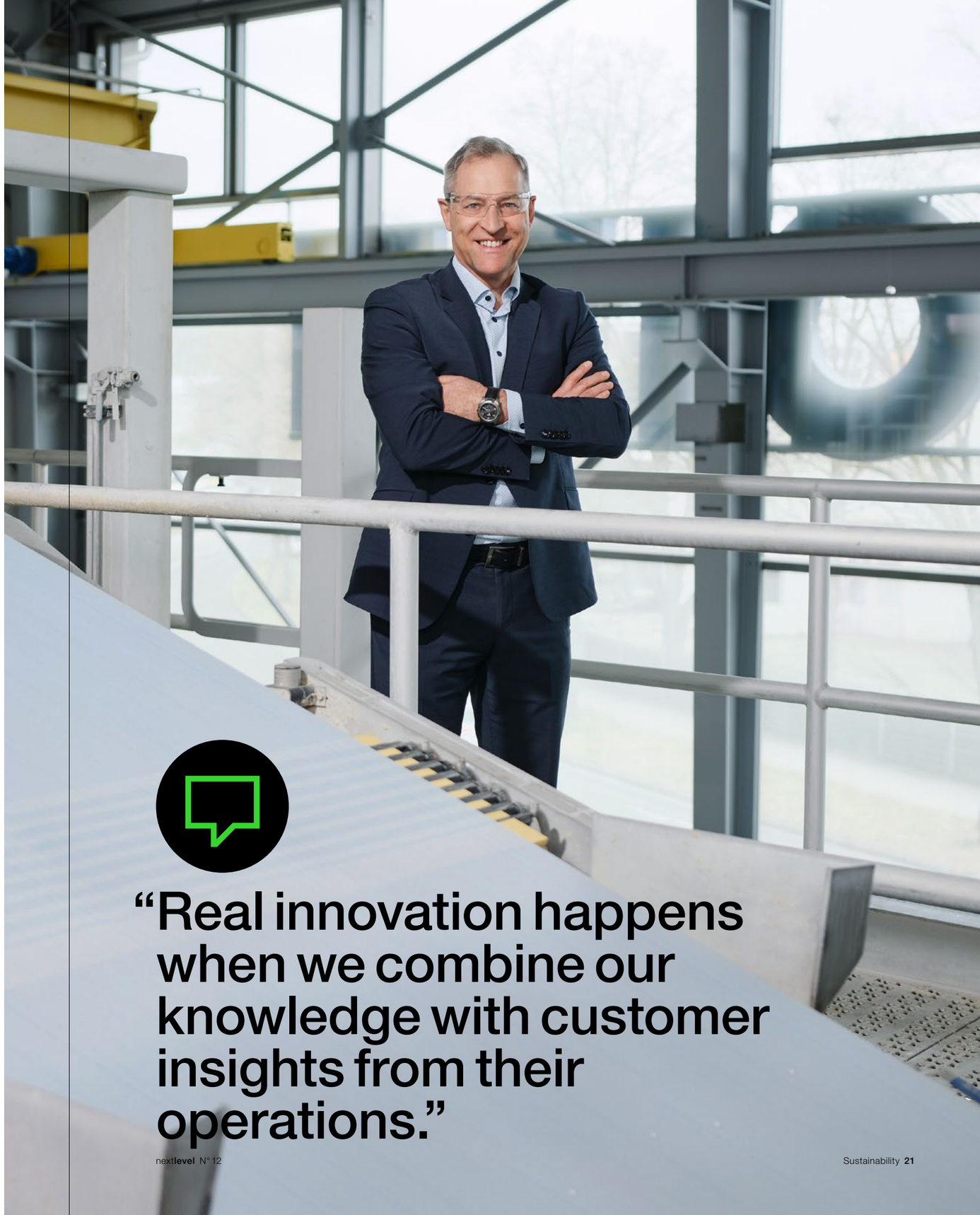
91 million m³

total savings achieved with HydroSeal

up to 12%

reduction in steam consumption with the HighPerformance Press solution

Who is Martin Bassmann?
Martin Bassmann joined Voith Paper in 2001 and has worked predominantly in the Division Fabric & Roll Systems ever since. In 2010, he was appointed Managing Director and Vice President Sales for Fabric & Roll Systems Europe. From 2013, as Senior Vice President Sales & Marketing EMEA, he was responsible for the Division Products & Services. He then headed up the EMEA region in the same division from September 2019 until July 2024, when he became a member of the Management Board of Voith Paper and took over the role of President of Fabric & Roll Systems.



"Real innovation happens when we combine our knowledge with customer insights from their operations."

With a wave of tailored building blocks, Voith is helping papermakers decarbonize energy-intensive processes along the entire production line – and put waste heat to better use.

Solid building blocks

“Decarbonizing paper production requires joined-up solutions,” believes Torben Schlieckau, Vice President Air Systems at Voith Paper. “Our responsibility is to ensure that the equipment, processes and digital tools – all the building blocks – tie together seamlessly into existing mill operations. We work closely with customers to map out their needs to ensure the energy supply is more sustainable and cost-effective.”

Building block:
unmatched domain expertise

“With well over 150 years of experience as a full-line supplier, Voith is uniquely positioned to guide mills through decarbonization, from consulting and installation to the essential services for long-term optimization,” says Schlieckau. The first step is a comprehensive pre-engineering assessment that analyzes energy needs, processes, waste heat sources, and operational and regulatory requirements. “There is no one-size-fits-all decarbonization solution,” adds Schlieckau. “Success depends on seamlessly integrating the essential building blocks across the production line, particularly for rebuilds. We ensure paper mills harness the full potential of new and proven technology to optimize processes without disrupting existing workflows.”

Building block:
integrating heat pumps

By capturing waste heat in the paper mill and elevating it to process temperatures, industrial heat pumps provide a sustainable, cost-effective alternative to traditional steam generation.



“There is no one-size-fits-all decarbonization solution.”

Torben Schlieckau
Vice President Air Systems, Voith Paper

However, integrating heat pump technology into existing infrastructure requires careful planning to ensure uninterrupted operations. Waste heat is often sourced from the dryer section exhaust air, but it can also come from coating processes or effluent treatment plants. “We determine how to adapt the existing steam and condensate systems to work reliably with the heat pump,” explains Schlieckau. “The decision on how to best use the available waste heat is based on our deep understanding of papermaking processes. We run simulations to ensure the heat pumps can handle fluctuations in steam demand and adapt to changes in operations without disrupting production.” The economic viability of heat pump installations is a common concern with papermakers, but with rising energy prices and carbon emission costs, they are becoming more competitive. “Over the lifetime of a paper machine, customers increasingly see heat pumps as a cost-effective, low-carbon, long-term solution,” Schlieckau says. “In many cases, the total cost of ownership is lower than traditional steam generation.”



Building block:
customer-centric success

Early adopters of heat pump technology are already providing valuable insights into decarbonization pathways. Felix Schoeller, a global leader in specialty papers, has implemented a full-scale industrial heat upgrade system at its Weissenborn site in Germany. This initiative is part of the EU-funded PUSH2HEAT project, which supports the integration of heat pump technologies in industrial settings. Fraunhofer IEG is providing scientific support and coordination for the implementation of heat upgrade technologies in the project. A key component is a two-stage high-temperature heat pump, which uses waste

heat from an existing water circuit to generate steam for the low-pressure dryer section at 124°C, with a coefficient of performance (COP) at the design point of 2.3. “By providing engineering support, supplying new heat recovery equipment and ensuring the seamless integration of this advanced system, Voith has played a pivotal role at Weissenborn,” says Carsten Schmidt, Senior Project Manager Engineering & Energy at Felix Schoeller.

Building block:
maximizing dryer efficiency

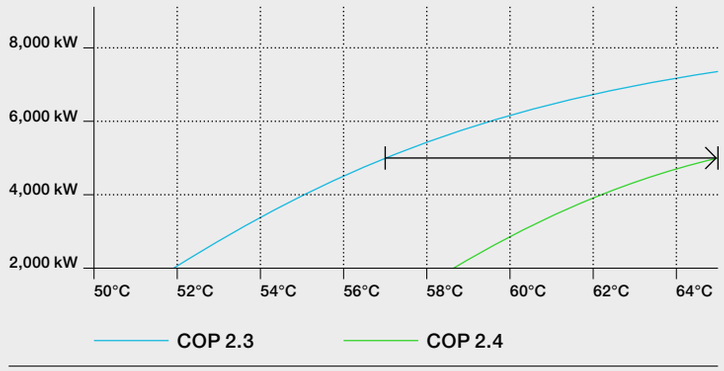
The dryer section accounts for up to two-thirds of a mill’s total energy consumption – making it a perfect candidate for emissions reductions. Voith’s EcoHood 65 is a game-changer in this regard, efficiently collecting evaporated water to prevent heat and moisture loss. It maintains a high dew point of up to 65°C or >200 g of water per kilogram of dry air – significantly higher than the industry standard of around 60°C or 150 g/kg. “A higher dew point allows the exhaust air to absorb more water without condensation forming in the hood. This means less air is required to remove moisture, and less air means less energy spent on heating and moving it,” highlights Manuel Thieke, Product Manager Air Systems at Voith Paper. “Compared to conventional hoods, the EcoHood 65 reduces the need for supply air and exhaust air by up to 25 percent – which means less steam is required to heat that air.” Beyond energy efficiency, the EcoHood 65 improves working conditions and protects buildings from damage.



“We are extremely satisfied with the innovations, which we see as an important building block for our future.”

Michael Habeck
Technical Managing Director, Jass

65°C
Highest operating dew point in the industry



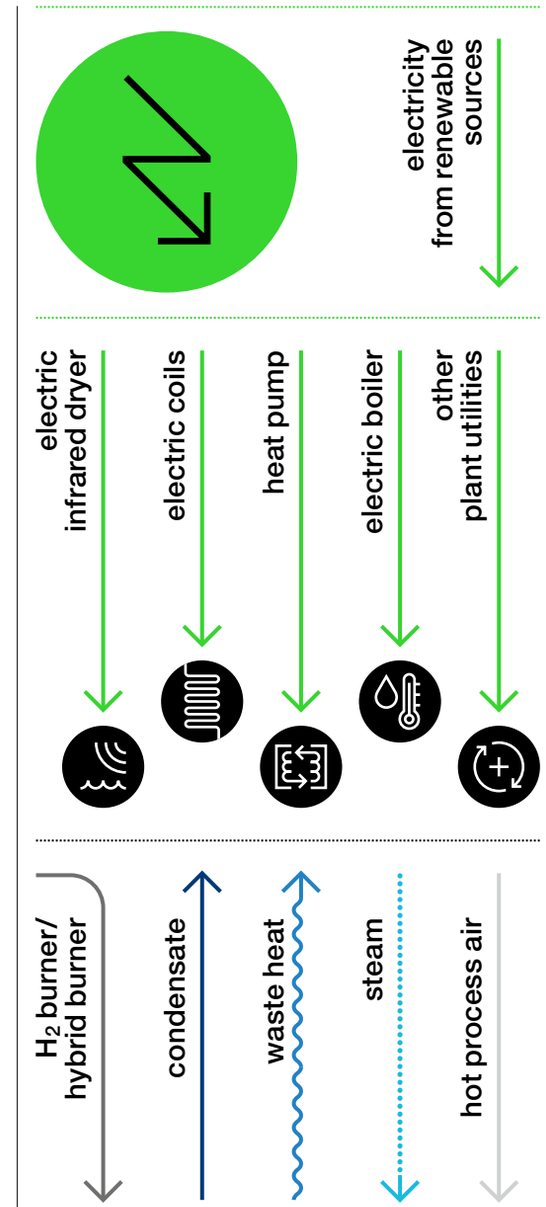
Heat pump performance improves with a higher dew point of 65°C
The EcoHood 65 provides the ideal basis for the energy-efficient operation of a heat pump by improving its coefficient of performance (COP). For a constant amount of recovered heat (y-axis), a heat pump achieves a higher COP when starting at 65°C (COP 2.4) compared to a start at 57°C (COP 2.3). For a 10 MW (thermal) heat pump, this 0.1 increase in COP translates to €285,000 in annual electricity savings or approximately 5 percent of the heat pump power consumption.

As a positive side effect, fewer leakages reduce the load on the building ventilation system, which leads to further energy savings. In addition, with its high operation dew point and corresponding heat recovery, the EcoHood 65 is also the ideal basis for the energy-efficient operation of a heat pump, as the coefficient of performance (COP) is improved (see table above). Recent installations, such as for the papermaker Jass, confirm the benefits. Extensive upgrades to the dryer section of the PM 3 at the company’s Fulda plant in Germany, which produces 280,000 tons of paper annually with basis weights of 120 to 140 gsm, included Voith’s state-of-the-art process control and QCS quality control systems as well as a highly efficient EcoHood 65. Since the rebuild, the company reports improved runability and energy savings in the dryer section. “Voith’s expertise and good teamwork have contributed significantly to this success,” says Michael Habeck, Technical Managing Director at Jass. “We are extremely satisfied with the innovations, which we see as an important building block for our future.”

–25%
With a dew point increase from 60 to 65°C, the electrical energy consumption of the air system is reduced by approximately 25%. When converting older hoods, energy savings of up to one-third are even possible.

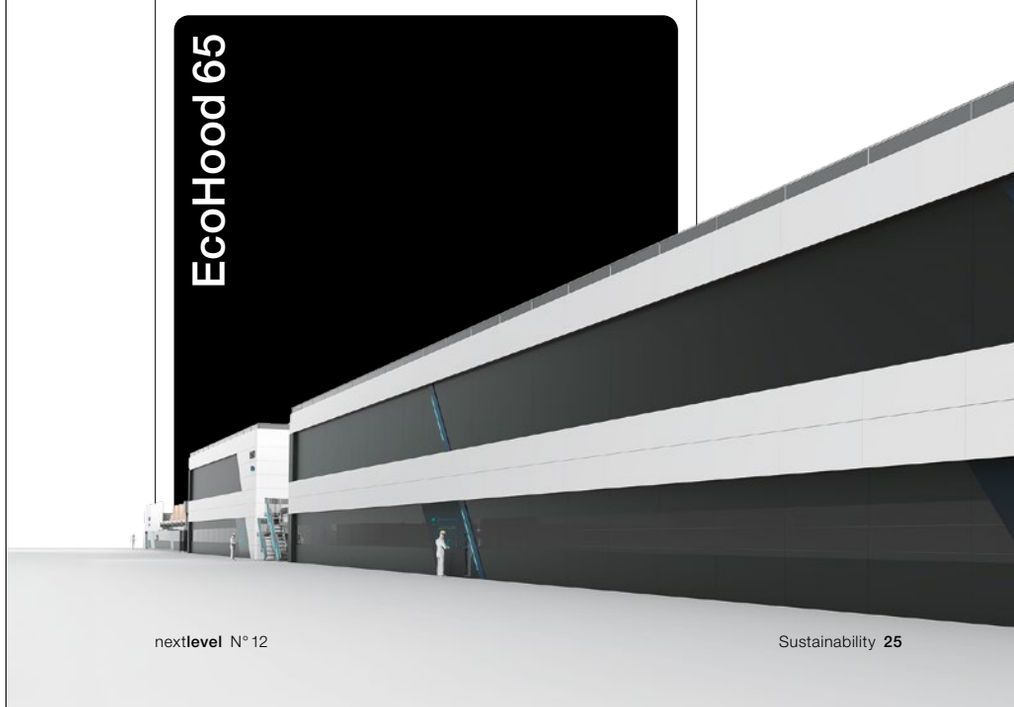
< 10 days
Full conversions to the EcoHood 65 – from shutdown to restart – have been completed in less than 10 days.

< 3 years
Typical payback period for the EcoHood 65



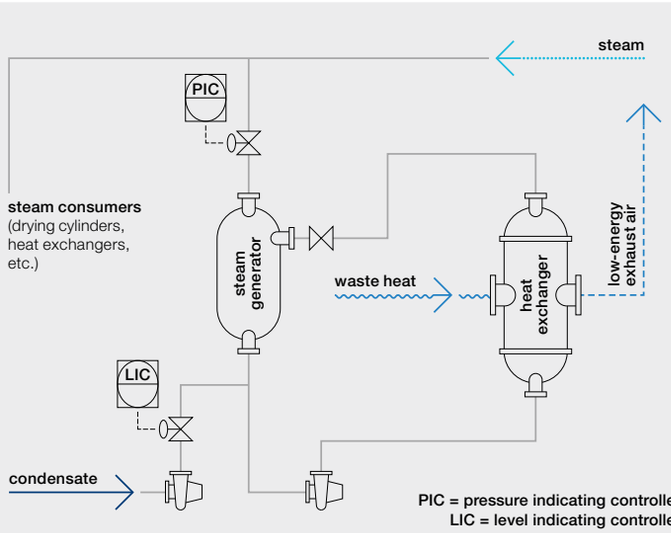
Building block:
electrification

On top of the building blocks featured, Voith supports decarbonization through the electrification of heating processes, using power-to-heat (steam generation) technologies, electric air heaters, electric infrared dryers, hydrogen combustible burners and hybrid solutions.



Building block:
efficient energy recovery

Voith's SteamBooster takes energy efficiency a step further by recovering heat from exhaust air to generate usable steam. "The potential energy and carbon emissions savings are substantial," explains Martin Dauner, Product Manager Steam & Condensate at Voith Paper. High-temperature exhaust air – whether from coating dryers or vacuum blowers – is transferred through a heat exchanger to generate steam from condensate, which is then fed back into production processes. This setup reduces the boiler load, significantly lowering energy costs. Originally designed and patented for tissue production, the proven technology has been further developed for use with all types of paper machines, including graphic paper and board and packaging. "Depending on machine specifications, SteamBooster saves up to two tons of steam per hour," highlights Dauner. For an average European paper mill, this translates into a return on investment within two years. "Since SteamBooster operates as an add-on, installation is straightforward and can be completed during standard maintenance shutdowns," Dauner adds. "It's a low-risk, high-reward turnkey solution, as multiple installations have already shown."



SteamBooster: recovering heat, reducing costs
Hot exhaust air is transferred through a heat exchanger to generate steam from condensate, which is then fed back into production processes, reducing boiler load and energy costs.

< 2 years
Payback period for an average European mill

–2 t/h
SteamBooster saves up to two tons of steam every hour.

Building block:
digital tools

While EcoHood 65 provides the foundation to save energy, OnC.HoodBalance, a new addition to Voith's Papermaking 4.0 portfolio, enhances heat recovery at the dryer hood and reduces electrical energy and steam consumption. The fully automated control system dynamically adjusts the exhaust and supply air fan settings to achieve both an optimal dew point and improved zero-line control. By maintaining the air system at the minimum required settings, the dryer operates at a higher dew point, which means lower energy consumption or the possibility to increase production. "OnC.HoodBalance continuously fine-tunes the operating set points across different paper grades and machine speeds without the need for constant manual adjustments by the operator," says Susanne Panzer, Product Manager Air Systems at Voith Paper. "The automatic control frees up operators to focus on other critical aspects of the paper machine, such as monitoring quality and making targeted adjustments."

200 g/kg
At a dew point of 60°C, air absorbs approximately 150 g of water per kilogram of dry air. At 65°C, it increases to 200 g/kg.

Engineered for ultra-high dew points and maximum energy savings

EcoHood 65

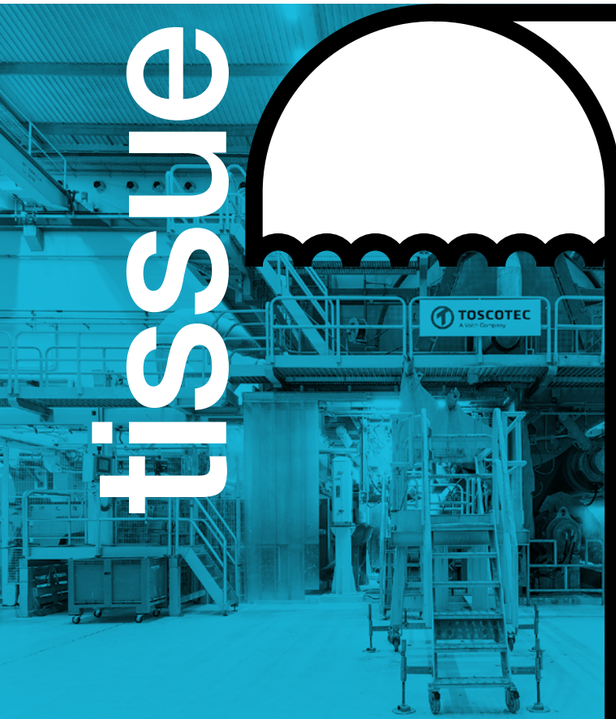
Together

Decarbonization is too complex to tackle alone. As a full-line supplier with unmatched domain expertise, Voith Paper has earned a reputation as a trusted strategic advisor to papermakers around the world. By leveraging disruptive technologies and its own harmonized product and services portfolio, the company is focused on enabling carbon-neutral paper production by 2030. By committing to long-term, collaborative partnerships, Voith seamlessly integrates essential decarbonization building blocks to ensure customers sustainably reduce the environmental impact of their operations with greater efficiency and cost savings.

Get in touch with the Voith teams for air systems and energy recovery solutions.



Pure tissue electric



One of a kind: the PM 1 is a trailblazer in the tissue industry.

The world's first fully electric high-speed tissue machine is now live. Toscotec's groundbreaking upgrade for Fortissue marks a new era in zero-carbon tissue production.

In an important milestone for the tissue industry, Portuguese tissue producer Fortissue has started up the world's first fully electric high-speed tissue machine at its facility in Viana do Castelo, Portugal. Supplied by Toscotec and originally installed in 2015, the upgraded AHEAD line (PM 1) is the first tissue machine in the world to operate at 2,000 m/min powered entirely by renewable electricity. "At Fortissue, we are proud to be at the forefront of sustainability in tissue manufacturing," says Nuno Ribeiro, Owner of Fortissue. "This groundbreaking project proves that top performance and environmental responsibility can go hand in hand, meeting the increasing sustainability demands of consumers across Europe and beyond."

Zero-carbon design

TT Turbodryer uses recovered heat to enhance TT NextPress shoe press dewatering, increasing post-press dryness.

TT Swing enables flexible operation with full cascading or hybrid modes for the hood drying process.

e-powered TT Hood enables fully electric hood drying.

e-powered TT SteamBooster combines waste heat recovery with electric heating to generate 100 percent of the steam necessary for the **TT SYD Steel Yankee Dryer.**

High-speed, highly flexible zero-carbon production

The PM 1 has undergone a complete electrification upgrade, replacing conventional gas-fired drying systems with Toscotec's turnkey technology. The cutting-edge solution includes an e-powered TT Hood with multi-stage heat recovery, along with the TT SteamBooster, which captures exhaust heat to generate 100 percent of the steam required for the TT SYD Steel Yankee Dryer. This system optimizes energy use while significantly reducing electricity demand compared to standard electric boilers. The flexible set-up allows Fortissue to source electricity from the Portuguese grid, which brings a 20 percent reduction in greenhouse gas (GHG) emissions, or from its own solar and wind plants, which results in net-zero GHG emissions.

"Toscotec's partnership with Fortissue has come a long way in the past 10 years, and we are delighted that they selected us for this pioneering project," adds Gabriele Romanini, Sales Manager at Toscotec. "PM 1 was state-of-the-art when it came online, and now we are taking it to an entirely new level – creating the first high-performance tissue line in the world to run fully on green electricity."

Page 29 45

#efficient paper making



Resilient together: driving high performance in close collaboration.

All in one

“This shared knowledge hub strengthens the mill’s ability to resolve issues proactively, creating a smarter, more resilient operation.”

Korbinian Hitthaler
Advanced Process Control & IIOT Engineer,
Voith Paper



“Understanding all stake-holders is key to building a solution that works for everyone – that’s what UX and CX are all about.”

Zsuzsanna Ozvary
Project Manager UX/UI Co-Development,
Voith Paper



How is Voith’s MillOne reshaping the way operators work, collaborate and upskill? Meet the experts behind this integrated ecosystem who are empowering Mondi and Sun Paper to drive efficiency and knowledge-sharing across their mills.

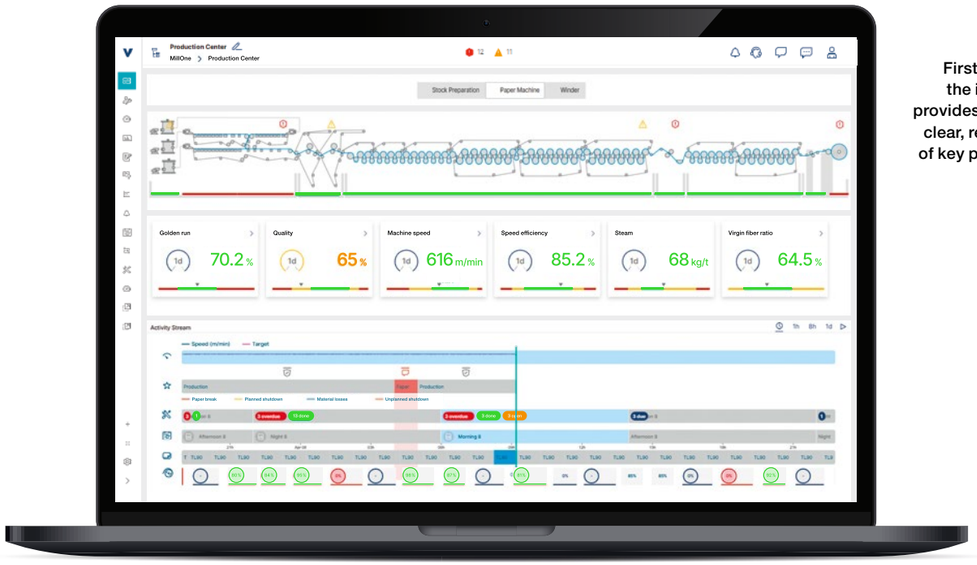
Paper mill operators are drowning in data displayed across multiple screens. Pressure levels, moisture content, machine speeds, machine condition, production targets and more – all demand immediate attention. As production lines grow ever more complex, data streams have multiplied and accelerated, creating what feels like an unstoppable overload for operators. “We analyzed up to 3,000 alarms on one machine in a single week,” says Lars Mallasch, Group Technical & Sustainability Director at Mondi. “No operator can handle that.”

Such a set-up is unsustainable for Mondi, a global leader in sustainable packaging and paper with 29 paper machines across 12 paper mills around the world. As part of its Mondi Action Plan 2030 sustainability framework, the company is committed to ensuring its packaging and paper solutions are reusable, recyclable or compostable. In 2024, 87 percent of its products, based on revenue, met this commitment (up from 74 percent in 2020). That’s impressive progress for such a bold vision. But challenges remain. As the company’s sustainability efforts increase, so does the complexity of its papermaking processes.

As Mallasch is keen to emphasize, traditional support mechanisms, such as improved shift models and standalone training, are ill-suited for today’s digitalized workplace or the next generation of operators. A fundamental rethink of how paper machines are operated – and how operators are empowered – was needed.

Out of the past, into the future

An initial partnership with a major consulting firm to drive organizational change fell short, primarily due to their limited industry expertise. Subsequent engagements with non-specialist providers also failed to produce meaningful improvements. “To drive real transformative progress, we needed Voith – a partner with deep domain knowledge,” says Mallasch. “We restarted at a higher level of shared experience and now work with a team that truly understands our challenges and pain points.”

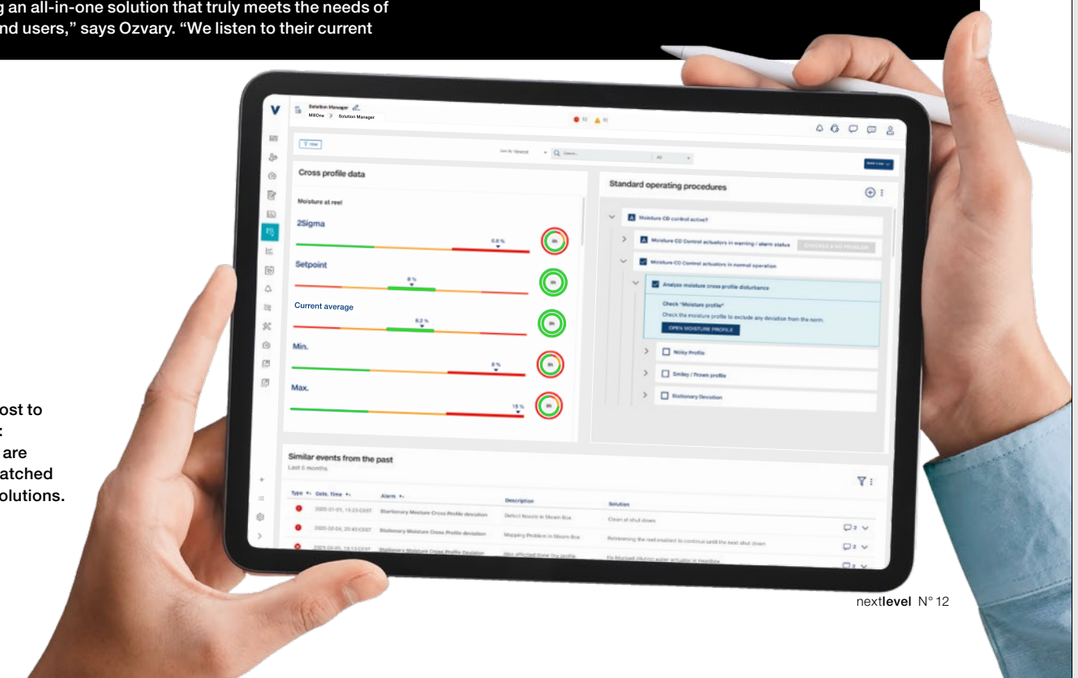


Production Center

First point of contact: the intuitive interface provides operators with a clear, real-time overview of key production assets.

Customer-centric development: putting operators first

It takes a diverse team to power up the MillOne solution – and a user-centric philosophy to bring the benefits that customers want. Multiple stakeholders were involved throughout the development process, including technologists, operators, production managers and business representatives from the customer side, and papermaking specialists, R&D experts and UX/UI (user experience/user interface) designers from Voith Paper. Regular joint workshops were held to gain insights and explore potential avenues. One person who helped pull all these distinct threads together – and made sure that customer experience (CX) was always at the heart of the process – is Zsuzsanna Ozvary, Project Manager UX/UI Co-Development at Voith Paper. "These workshops are a crucial part of designing an all-in-one solution that truly meets the needs of our customers and users," says Ozvary. "We listen to their current struggles and future needs, empathize with how they think and how they work and collaborate closely together. Understanding all stakeholders is key to building a solution that works for everyone – that's what UX and CX are all about." Rather than a one-time rollout, the Voith team has worked in cycles, constantly gathering user feedback and fine-tuning the application as part of the continuous improvement process. "It was impossible to predict what would work from the start," says Ozvary. "So, we adopted an iterative process with regular feedback loops." On top, Mondi was involved as a pioneering pilot customer and co-developer, putting every MillOne iteration to the test in a full-scale production environment. "But we're not finished yet," adds Ozvary. "We continue to expand MillOne, adding practical, problem-solving features in close collaboration with more papermakers."



Solution Manager

A systematic boost to troubleshooting: recurring issues are identified and matched with approved solutions.

"MillOne connects all the dots in papermaking and brings them together on a single point."

Ulf Grohmann
Director
Product Management Autonomous Mill,
Voith Paper



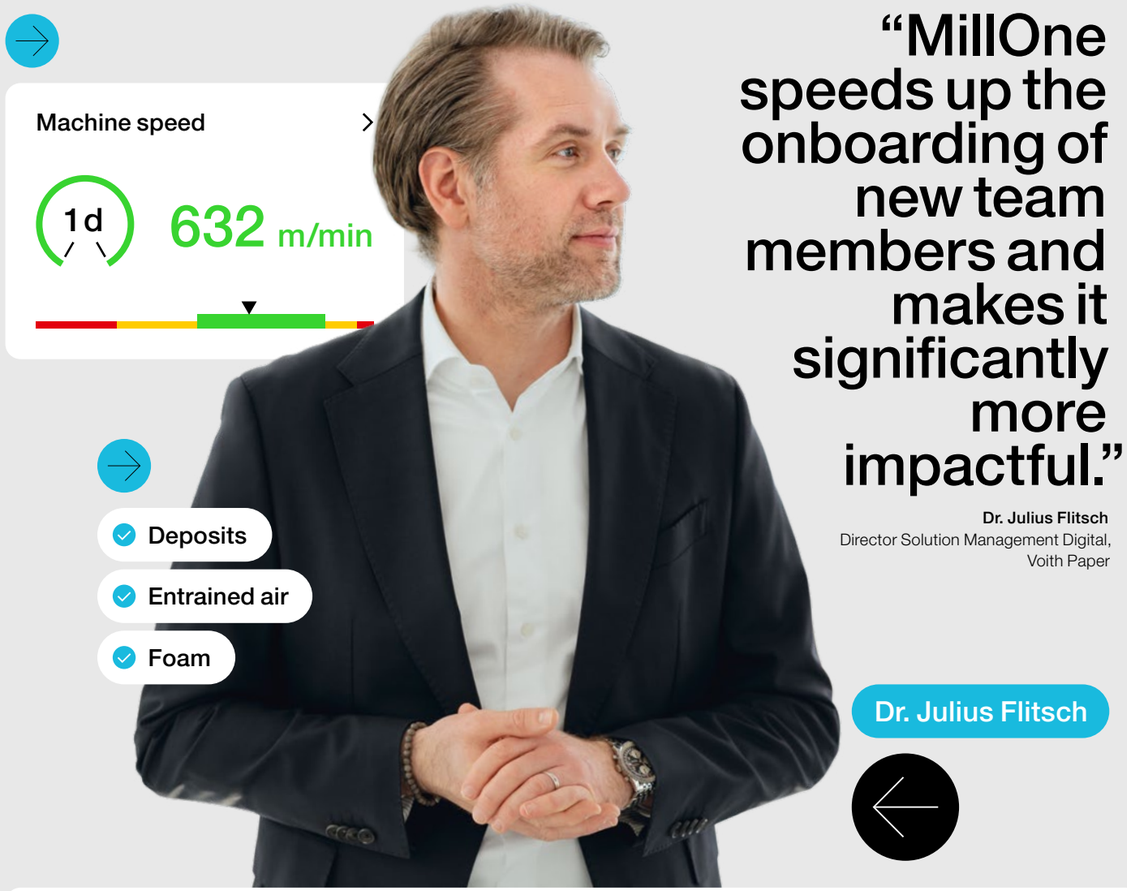
This forward-looking step required Mondi and Voith to invest in what was essentially a joint R&D project – with no guaranteed outcome. Now, with the right expertise in place, Mondi and Voith were better able to reimagine the control room and the kind of real-time support it should provide. "Together with Voith, we're taking away the distractions so that operators can focus on the real challenges that need solving," says Mallasch.

The next-generation control room is here

The result is MillOne, an operations management system that delivers a clear, actionable overview of all papermaking processes and operations, as well as the relevant support for operators. MillOne has been up and running on one Mondi production line for over a year, and it's implemented on three more. "MillOne connects all the dots in papermaking and brings them together on a single point at the Production Center," says Ulf Grohmann, Director Product Management Autonomous Mill at Voith Paper. "Everything an operator needs to know is here. We're making it easier for people on the front line to deal with the complexity of modern papermaking. There are no excess tools. There's no overload." The reaction of operators has therefore been understandably positive. "For the first time in the development of such digital solutions, our operators are pushing us to be faster with new modules," says Mallasch. "It's very encouraging to see this pull from the people we want to empower."

One integrated ecosystem breaks down siloes

Typically, a traditional control room might have 15 or more screens with disparate systems – and only one or two operators to deal with them. Often, data is still entered manually, involving endless copying and pasting between spreadsheets, creating stress and inefficiencies. In contrast, MillOne captures, synchronizes, unifies and contextualizes a wide range of data sources – from maintenance management and manufacturing execution systems (MES) to process data historians and production line data – aligning them with papermaking processes and business goals. "Instead of siloed information, operators see only relevant key performance indicators, enabling faster, more accurate decision-making and smoother shift changes," explains Dr. Julius Flitsch, Director Solution Management Digital at Voith Paper. "The user-friendly MillOne interface reduces cognitive load and supports task-based operations."



“MillOne speeds up the onboarding of new team members and makes it significantly more impactful.”

Dr. Julius Flitsch
Director Solution Management Digital, Voith Paper

Dr. Julius Flitsch

Capturing knowledge with the Solution Manager

This single Production Center is just one of the powerful features of MillOne. Another is the Solution Manager. This centralized knowledge hub captures and shares operational know-how. “In many mills, operators handle problems on the fly, which leaves little opportunity to document solutions for future use,” highlights Korbinian Hitthaler, Advanced Process Control & IIOT Engineer at Voith Paper. “As a result, valuable knowledge is often lost, and teams have to solve the same issues repeatedly.” The Solution Manager changes that by enabling operators to log issues, document root causes and record implemented solutions. When a similar problem occurs again, operators have quick access to past fixes. In addition, AI-driven recommendations provide step-by-step guidance, which further streamlines trouble-shooting and decision-making.

“Over time, this shared knowledge hub strengthens the mill’s ability to resolve issues proactively, creating a smarter, more resilient operation,” notes Hitthaler. Unlike off-the-shelf management tools, MillOne’s Solution Manager is fully integrated with the mill’s existing systems. This allows it to pull in relevant data and context specific to that mill. At the outset, Voith provides solution templates and guidelines that are based on best practices specific to the equipment at the mill, the processes used and any common issues. Supported by Voith, each mill can subsequently document solutions to ensure the recommendations are relevant, which allows MillOne to provide practical guidance to the operators.

Promoting learning with AI

Further support for operators comes via MillOne’s integrated learning management system (LMS). This scalable platform allows operators to easily create, share and access training within their own daily tasks and workflows, making onboarding and upskilling seamless. It also features mill-relevant content from the Voith Papermaking Academy. “It’s much more than just a learning tool,” says Grohmann. “Within MillOne, this LMS functions as an embedded support system, helping operators develop the skills needed to adapt to evolving mill operations. By integrating micro-learning, community-building, gamification and training with daily operations, we help mills foster a culture of continuous learning, ensuring operators are both empowered and future ready.” When linked to HR systems, mills can define role-specific skill sets, track operator progress and address relevant skills gaps proactively. “As part of the autonomous mill vision, the LMS helps elevate the workforce by automating routine tasks while equipping operators with knowledge to take on higher-level responsibilities,” concludes Grohmann. “With MillOne, every operator can be the best operator.”

Supporting operators more efficiently at Sun Paper

For Sun Paper, a leading figure in the papermaking industry in Asia, this focus on targeted guidance and learning support was a key motivator to implement MillOne. Another was the trusted two-decade long partnership with Voith, which has led to 18 record-breaking paper machines for multiple paper grades with a combined production capacity of over 8.5 million tons. However, finding and retaining talent for all these lines is becoming a challenge – and a driver of mill automation.

“Our vision for the future is the dark control room,” says Ying Guangdong, Vice General Manager and Chief Engineer of Sun Paper. “That does not mean we don’t need talented employees anymore, rather the opposite. We would like to allow our operators to make higher-level decisions that directly impact quality, output and the cost of our production. To do this, we need systems that provide sufficient process and business data to enable decision-making processes directly at the front line. We believe MillOne will support us in the future with solutions that help guide our operators better.” Such guidance is particularly useful during critical process transitions and grade changes, and ensures faster and more stable operation. For Ying, the MillOne’s Automated Line Settings are a great support for the operator, as are the predictive monitoring solutions that flag increased risks of paper breaks or potential equipment issues early on. “Technological development, especially recent advances in AI, will create even greater benefits in MillOne,” notes Ying. “We are looking forward to those solutions and are working on them together with Voith.”

The operational excellence loop: trigger and action

Use case: streamlining shift handovers, onboarding and workflows

When an inexperienced operator takes over a shift, MillOne ensures they’re instantly up to speed. A quick check-in with MillOne’s Production Center provides a clear, real-time overview of the machine’s performance and production status. At the same time, MillOne continues to constantly monitor production, autonomously adjusting parameters for paper grade changes or shifts in production capacity. If the system detects an anomaly, MillOne’s trigger and action system comes into play. MillOne pinpoints the exact issue – the trigger – and in response creates a task – the action – for the operator. With a single tap, the operator can pull up a step-by-step trouble-shooting guide in the Solution Manager, the collaborative knowledge hub. Video tutorials and contextualized SOPs (standard operating procedures) ensure the right actions are taken on time. Meanwhile, MillOne takes care of the rest, scheduling maintenance, logging repair history and providing process data to the right teams. “This joined-up trigger-and-action system is a standout feature of MillOne,” explains Dr. Julius Flitsch, Director Solution Management Digital at Voith Paper. “Routine tasks are offloaded onto MillOne, while skilled operators focus on higher-level decision-making that drives productivity and profit in a continuous operational excellence loop.” In this way, MillOne ensures that all operators, whether they have been working in the paper industry for 20 years or only six months, can bring the machine to the peak performance level faster and more efficiently: “MillOne speeds up the onboarding of new team members and makes it significantly more impactful,” concludes Flitsch.

Together

Every paper mill has unique challenges and priorities. Whether in process optimization, training automation or real-time decision-making, the Voith teams work on MillOne solutions directly with the people who stand to benefit from the integrated ecosystem. Together with management, engineers and production crews, Voith expertly assesses and identifies key focused areas to get each mill off to a strong and committed start – and ensures constant alignment with operational and business goals at every step.

Get started – book a demo!

Risks down, production up

With Voith's innovative winder upgrade solutions, operators at three leading paper manufacturers benefit from reduced workloads, enhanced safety and seamless production.

At the end of the line, all eyes are on the winder. Frequent format changes, maintenance downtimes, dust build-up and hazardous blade handling slow down production and increase risks. Instead of bottlenecks, Fabian Köberle, Global Product and Service Manager at Voith Paper, sees opportunities for increasing safety, reducing workloads, and securing a competitive edge: "We've developed innovative upgrade solutions that improve efficiency and transform the winder section into a safer, cleaner and more attractive place to work."

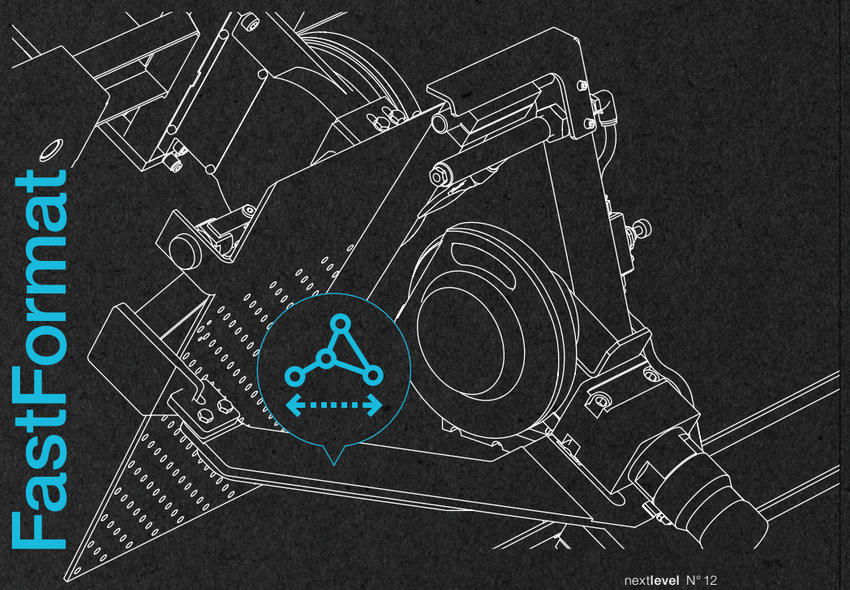
Putting an end to old hazards for DS Smith

A key innovative Voith winder upgrade eliminates time-consuming manual format changes. The FastFormat solution is a fully automated, high-precision system that seamlessly adjusts the engaged edge slitters to the required web-width scenario. Furthermore, the format change time can be minimized thanks to the optimized automation logic and maximized positioning speed. Already installed in several paper mills, FastFormat has a direct impact on winder performance and reduces the manual workload because no operators are required for format changes. Notably, it can be retrofitted to existing winders. At DS Smith Paper, a leading international provider of sustainable fiber-based packaging solutions, FastFormat delivers tangible benefits. At the DS Smith Witzenhausen Paper Mill, where high-quality recycled containerboard is produced, operators are enjoying the results. "FastFormat offers us enormous productivity and safety benefits," says Ulf Heiligtag, Head of Technology at DS Smith. "And it's an important step towards a fully automated process."



"FastFormat offers us enormous productivity and safety benefits."

Ulf Heiligtag
Head of Technology, DS Smith



FastFormat benefits

- Improve safety through fully automatic format changes
- Eliminate loss of production from time-consuming manual format changes
- Reduce workload by eliminating the need for operator intervention

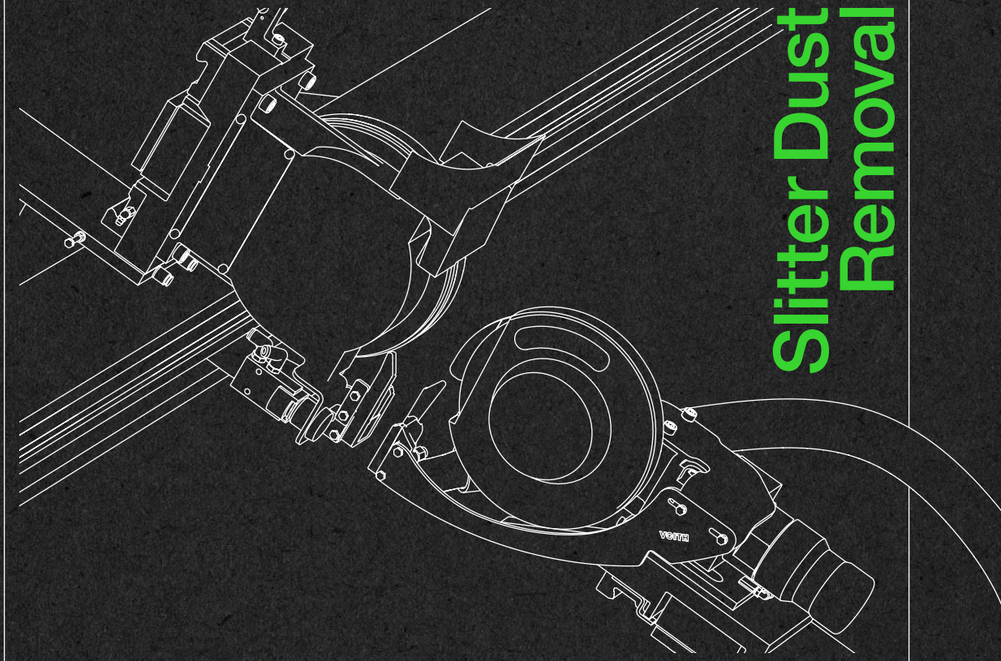
+ 60 minutes

FastFormat speeds up format changes, increasing daily production time by up to 60 minutes.



"The new Slitter Dust Removal system brings us a big step closer to our desire for a dust-free winder."

Christoph Nahrath
Production Manager PM 5 and PM 6, Schoellershammer



Slitter Dust Removal benefits

- Improve safety by reducing dust pollution in the ambient air
- Reduce effort for cleaning and unplanned downtimes
- Achieve highest dust capture rates – up to half a ton per year

Creating a cleaner, safer workspace for Schoellershammer

Dust build-up – those fine particles from the slitting process – clog machinery, increase maintenance time and pose serious health risks to operators. A dust audit performed by Voith's experienced measurement and diagnostic team can pinpoint where dust is created, while Voith's Slitter Dust Removal system tackles this hazard at source. The customized, flow-optimized suction shoes capture and remove dust directly from the top and bottom of the paper. In this case, it reliably collects up to half a ton of dust annually. This substantial dust reduction in the working area around the winder benefits operators immensely, while the reduction in dust on the sheet surface brings qualitative benefits for papermakers, as Christoph Nahrath, Production Manager PM 5 and PM 6 at Schoellershammer in Düren, Germany, confirms. "The new Slitter Dust Removal system from Voith has been successfully in use on our PM 6 since 2022," highlights Nahrath. "This brings us a big step closer to our desire for a dust-free winder. The dust created during cutting is sucked away directly at the point of origin and no longer gets into the ambient air. This reduces both the cleaning effort and the dust pollution – and protects our operating staff in two respects."

SharkBlade and Slitter Care

SharkBlade and Slitter Care benefits

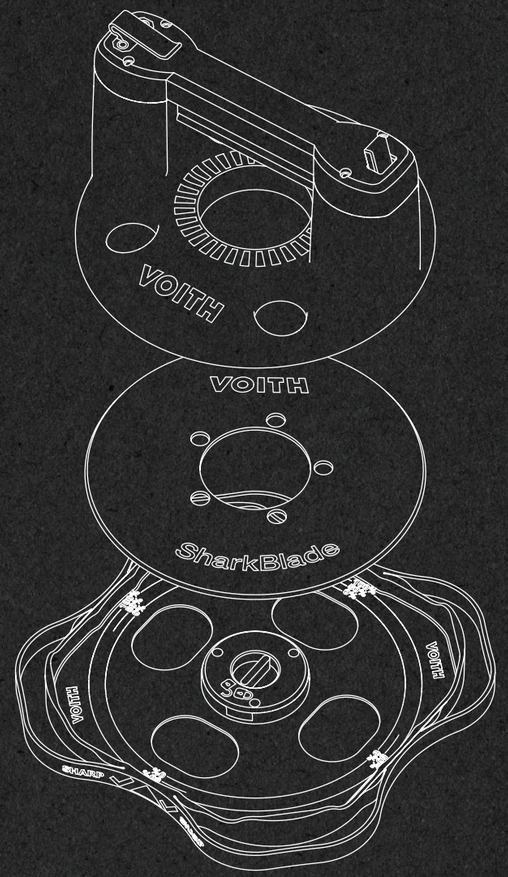
- Improve safety with injury-free slitter exchange
- Lower lifecycle costs thanks to stable sharpness and a service lifetime up to four times longer
- Reduce operator workload when exchanging dull slitters

Trailblazing the self-sharpening SharkBlade at Koehler Kehl

Voith's cutting-edge SharkBlade is the industry's first self-sharpening slitter. With a service life around four times longer than conventional blades, this innovation reduces operator workload and enhances safety. These are key advantages for Guido Ressin, Manager Converting at Koehler Kehl, where flexible packaging solutions are produced. "With SharkBlade, the slitter lifetime on our VariPlus winder has increased by three times," Ressin explains. "Correctly installed and adjusted, it's even possible to increase the lifetime by five times." When it's time to exchange the blades, Voith's unique quick-click, fast-change system ensures an easy and injury-free process. Thanks to the innovative mechanism, blades are swapped out in under a minute – more than five times faster than the industry standard. As an added safety feature, the blades are shipped in a dedicated slitter transport box, ensuring transport is safe and secure. For mills looking to optimize slitter performance even further, Köberle recommends the Voith Slitter Care service, which provides a fully managed blade replacement and maintenance program. "Mills across Europe and Scandinavia currently benefit from our customized sharpening and exchange schedules," Köberle notes. "Slitters that are always sharp reduce downtime and improve cutting precision."

5× faster

Slitter blades are swapped out five times faster with the quick-click, fast-change mechanism.



Together

Voith develops automation and safety innovations in close collaboration with papermakers, ensuring solutions are both practical and effective. A prime example is the customer-driven development of the Slitter Dust Removal system, which combined academic research, extensive in-house trials, and real-world testing across customer sites. Voith then finalized the flow-optimized suction shoe, marking a significant breakthrough in innovation and efficiency.

Whether creating innovative equipment, designing a new mill, undertaking a major rebuild or optimizing an existing winder section, Voith delivers tailored, high-performance solutions. Its innovative machinery, equipment, and winder services reliably provide measurable customer benefits. More than just supplying technology, Voith's domain experts understand the key performance indicators (KPIs) that drive peak winder performance – and know exactly what actions are needed to align them. By eliminating hazardous manual tasks, reducing downtime and improving air quality, Voith helps papermakers create safer, more efficient and smarter workplaces that attract skilled operators.

Unplanned shutdowns down to zero

The Voith Mill Resident program takes collaboration to the next level for Marusan Paper. Dedicated on-site support secures uptime and cost-efficient production.



Close collaboration has reached new heights between Marusan Paper and Voith Paper Japan. Since September 2024, Yumi Sekine has been the Voith Mill Resident Engineer at the company's Haranomachi mill in the Fukushima prefecture, providing dedicated on-site support for the leading Japanese papermaker. "Having a Voith expert at our mill makes all the difference to us," says Kazunori Urata, Production Manager at Marusan Paper. "Together, we can identify spare parts much more easily and the ordering process is more efficient. If we have any operational issues or requests, our Mill Resident ensures that they are always immediately handled by the original equipment manufacturer."

At the Marusan Paper Haranomachi mill, Sekine works closely with the operations and maintenance teams on the PM 8. Built after the Great East Japan Earthquake in 2012 and completed in 2014, this Voith XcelLine paper machine for kraftliner has a daily production capacity of 800 tons. Sekine deeply understands both the maintenance history of the critical machine and also the customer needs, which leads to faster troubleshooting, actionable insights on preventive maintenance and tailored solutions that ensure operational goals are consistently met.

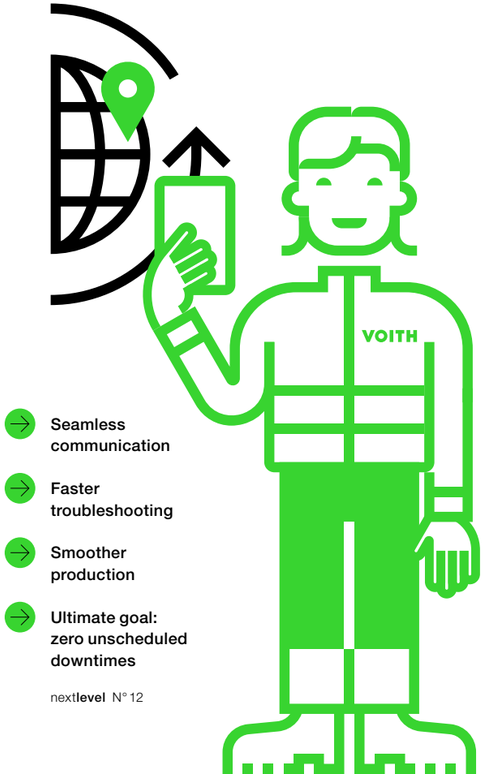


Yumi Sekine
Mill Resident Engineer, Voith

"When I identify an issue with any equipment on site, I immediately report it to our engineering team," explains Sekine. "If I'm unsure how to resolve the problem, my colleagues share their expertise or brainstorm solutions with me. I truly enjoy this collaborative process. Having a direct line to the global network of Voith experts means we can propose solutions or recommend the perfect spare parts much faster than before, which is helpful for both the customer and our team." However, the Mill Resident program is about more than just troubleshooting, order processing or wear parts and spare parts management. With Sekine on board, the Haranomachi mill benefits from Voith's unique insights into papermaking. The result? A lighter workload for the Haranomachi team and a clear path toward optimal performance and zero unscheduled downtimes.



Kazunori Urata
Production Manager, Marusan Paper



- Seamless communication
- Faster troubleshooting
- Smoother production
- Ultimate goal: zero unscheduled downtimes

Learn more about the Voith Mill Resident program.

Together

Currently, 13 Voith Mill Residents are working side by side with customers in their facilities across the Asia-Pacific region. These on-site experts are on hand to support during inspections, speed up troubleshooting, ensure fast delivery of wear and spare parts, and provide firsthand real-time insights into potential challenges and performance-boosting solutions. This close collaboration means customers receive timely and effective service support exactly when and where they need it. Given the success of the program, more Mill Residents will be joining customers in the future.

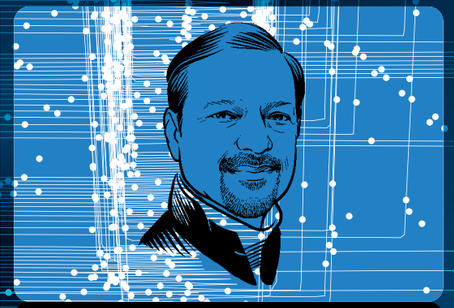
Kuantum Papers, a leading integrated paper and pulp manufacturer in India, is already on a pioneering digital transformation journey. In this interview, the Vice Chairman and Managing Director Pavan Khaitan discusses the company's ambitious mission, the challenges faced and the promising results, as well as the vital role the close partnership with Voith Paper and BTG plays along the way.

Lessons learned

Akhlesh Mathur: What inspired you to set off on this digital transformation journey?
Pavan Khaitan: The paper industry is undergoing significant changes, driven by increasing demand for efficiency and sustainability. To remain competitive, we had to embrace digital technologies, even if it meant biting the bullet to ensure long-term survival in the market.

AM: What challenges did you face?
PK: The biggest challenge was the shift in organizational mindset. Moving to a digital-first approach required rethinking traditional roles and processes. Balancing ongoing operations with new initiatives was also a tough task. We therefore adopted a structured change management strategy that focused on training and communication. We involved our teams early in the process and established cross-functional teams to ensure alignment and collaboration across departments. To facilitate focus and drive change management, we hired experienced project managers who were supported by young, talented and digital-minded team members. We had the operations team work together collaboratively to drive results.

AM: What initial steps did you take?
PK: We focused on identifying key performance indicators across our operations. We also implemented sensors (eyes to process) and monitoring tools to collect real-time data accurately. It was crucial to have a solid understanding of our baseline performance before we could make any meaningful changes. Data integration was a significant challenge as some systems were operating in silos. We therefore implemented BTG's dataPARC to unify data sources, from production metrics to maintenance logs. This integration gave us actionable insights and empowered our dynamic mill operations team to make quick, data-driven decisions that improved our organizational efficiency.



Pavan Khaitan
Vice Chairman & Managing Director, Kuantum Papers

AM: Moving on to automation. How did you start?
PK: Once we had a strong foundation, we started automating our core processes. We implemented Voith's advanced control systems that are powered by machine learning algorithms. These systems mimic skilled operators, optimizing production schedules, predicting quality issues and reducing operational variability. The results were transformative. We saw a reduction in waste and an increase in output. Our operators could shift their focus to more strategic tasks instead of being bogged down by manual monitoring.

What is dataPARC?

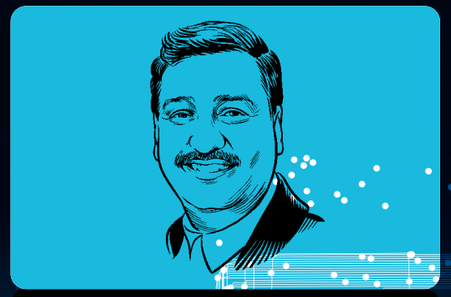
dataPARC is a data historian toolkit that unifies and visualizes data from multiple sources, supporting real-time, data-driven decisions that improve efficiency and reduce costs.

AM: How did you approach mill-wide optimization?
PK: The next step was leveraging advanced analytics to create a digital twin of our operations. This tool allowed us to simulate different scenarios and predict their impact on overall performance. It provided valuable insights into optimizing not just individual processes but the entire mill's efficiency.

AM: Can you share your progress?
PK: Digital transformation of such gigantic magnitude is inherently a gradual process. We're already seeing gains coming in, but we need to give it time. Good things will follow. I think the day is not far away when we can sit back and savor the results. Our strategy is to continue to invest in assets and optimization efforts to ultimately deliver 100 percent quality products out the door.

AM: What does the future hold?
PK: It looks promising. We plan to expand our automation efforts, integrating more advanced process controls to enhance mill-wide optimization. Our vision is to create a fully connected and smart manufacturing environment, which will not only improve efficiency but also reduce our environmental footprint.

AM: What would you say to papermakers considering this journey?
PK: Be patient. Change takes time, but the results are worth it. First, start with a clear vision and identify your key priorities. Second, involve your teams from the beginning and ensure they are equipped with the necessary skills. Third, solidify your foundational processes before diving into advanced technologies and make sure you have a robust data integration strategy. Finally, choose the right partners who understand your industry and can provide the support you need along the way.



Akhlesh Mathur
Head of Business South Asia & Southeast Asia, BTG Group

AM: A final word of advice?
PK: It's time to move beyond the mindset of "man versus machine" to "man with machine." Together, we can create unimaginable levels of innovation. There's been enough discussion around AI. Take the plunge and enjoy the journey!

Key benefits to date

Power boiler

- Reduced manual interventions from 12 to 15 per day to fewer than five.
- Reduced oxygen variability in the boiler economizer by more than 10 percent, improving boiler efficiency by two to three percent.
- Reduced header variability by more than 30 percent COV (coefficient of variability), improving power generation efficiency on turbogenerators.

Hardwood and agro-pulp bleaching

- Achieved tighter final pulp brightness of approximately five percent COV.
- Reduced cost of bleaching chemicals by US $3–8 per ton of pulp.

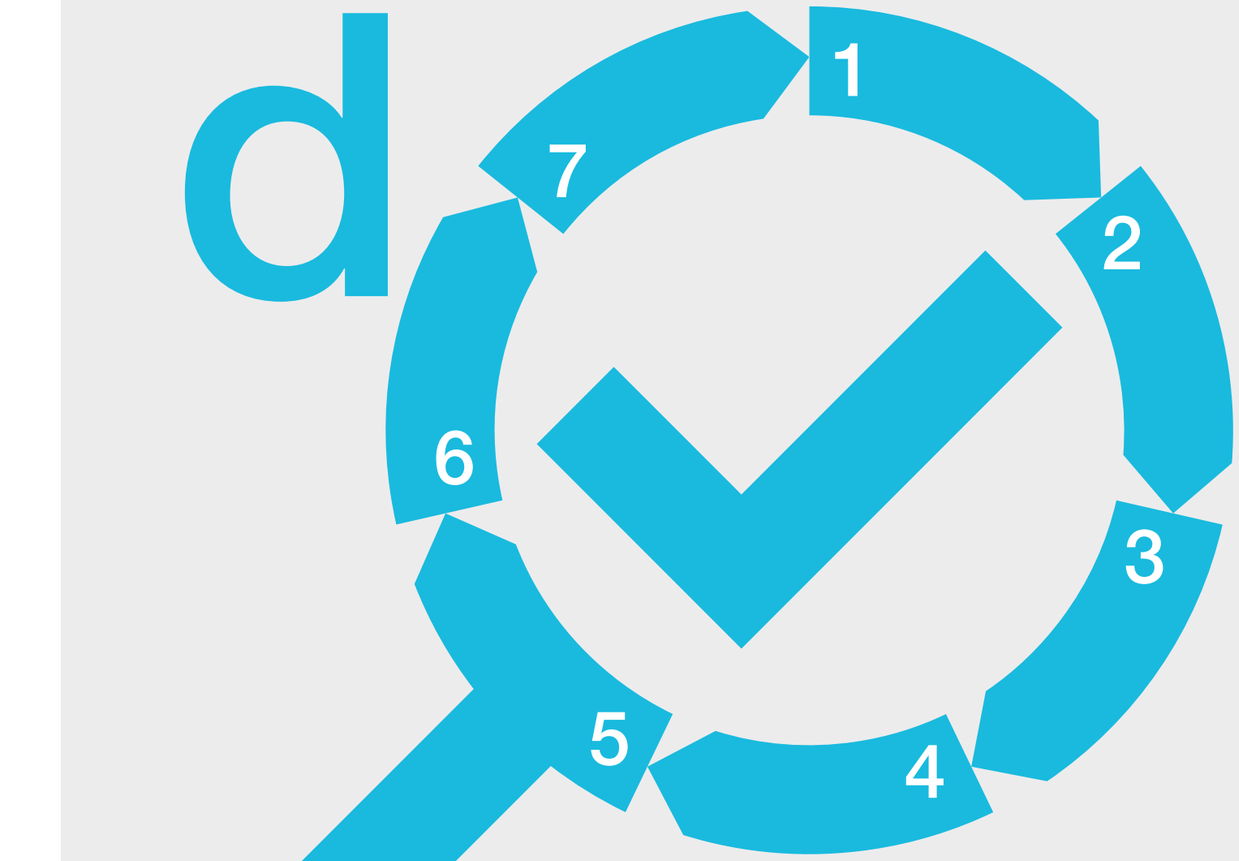
Ambitious goals

- Improve overall efficiency
- Achieve 100 percent quality
- Reduce operational costs
- Improve environmental profile

Together

Supported and guided by Voith and BTG, a Voith company, the digital transformation process at every paper mill is carefully mapped out and continuously monitored in close collaboration. In an exciting next step, papermakers are now implementing Voith's MillOne solution, an operations management system that delivers a clear, actionable overview of all papermaking processes and operations. This integrated ecosystem unites disparate systems and replaces multiple screens with a single interface, the Production Center. Voith's user-friendly focus supports operators in data-driven decision-making and greatly simplifies onboarding (see pages 30–35).

Shut–down!



Seven steps to sustainably boost availability and productivity

Each shutdown strengthens the long-standing partnership and boosts machine availability. For over a decade, Klabin and Voith have expertly planned and executed annual maintenance shutdowns together, ensuring safety, reliability and efficiency at every step. By aligning customer needs with best maintenance and production practices, their close collaboration continues to drive excellence in papermaking.

When a paper mill shuts down production for 10 consecutive days every 15 months, the payback must be clear and tangible each time. For Klabin, Brazil's largest producer and exporter of packaging paper and sustainable solutions, the benefits – future excellence in papermaking across all key performance indicators (KPIs) – justify every second. The availability of PM 9 now exceeds 95 percent.

"Voith is exceptionally well-organized and committed to quality, which delivers superior results every time," says Luiz Francisco Almeida, Engineering and Maintenance Planning Manager at Klabin. "This long-lasting partnership has led to very good results for the PM 9 in terms of safety, quality and productivity over the past 17 years." And the results speak volumes. Over more than a decade of collaboration with Voith, we have almost halved unplanned downtimes of the PM 9 from 19 days to 10 days. The expansion project from 2014, together with the continuous maintenance plan, boosted annual production capacity from 250,000 tons to over 400,000 tons.

"We're confident this upward trend will continue with every shutdown," says Elivaldo Silva, Head of Services South America and Operations at Voith Paper, Brazil. "Klabin trusts us with all life-cycle maintenance activities because we consistently achieve higher availability, greater performance and best-in-class machine condition."



> "With the help of precise planning and Voith expertise, the PM 9 machine is operating at record efficiency."
>
> Luiz Francisco Almeida
> Engineering and Maintenance Planning Manager, Klabin

> “Klabin trusts us with all lifecycle maintenance activities because we consistently achieve higher availability, greater performance and best-in-class machine condition.”
>
> **Elivaldo Silva**
> Head of Services South America and Operations, Voith Paper Brazil

A 15-month cycle of collaboration and results
In October 2024, Voith and Klabin successfully completed the most recent maintenance shutdown of the PM 9. As the largest and most modern paper machine at the unit, this shutdown is a critical investment in the future of the mill. Success hinges on meticulous planning, flawless execution and a joint commitment to continuous improvement. The foundation for the smooth execution of the PM 9 shutdown of such complexity and scale lies in Voith’s detailed planning cycle that never stops spinning. Just as a football team immediately sets their sights on the next match after a game ends, the Voith and Klabin maintenance team look ahead together to the next shutdown as soon as the paper machine is starting up again. For the PM 9, that is already scheduled for January 2026.

Lessons learned, strategies aligned
Every **shutdown** follows a structured seven-step planning cycle. Each phase addresses specific operational needs and contributes to the overall goal of maximizing machine uptime, reducing maintenance costs and ensuring customer satisfaction through efficient and effective service delivery. Just like in top football leagues, discipline is key.

At the end of one shutdown, Voith documents all maintenance activities and compiles **technical reports** for Klabin, outlining recommendations for service, repairs and spare parts for the next maintenance shutdown. A cornerstone of the planning cycle is the **lessons learned** phase, where Klabin and Voith teams analyze the technical reports together, reflect on the results and identify opportunities to refine maintenance activities that further enhance efficiency, reduce costs and improve overall machine availability. These insights shape the scope of the proactive maintenance and the next shutdown, which are collaboratively defined and aligned with Klabin’s KPIs.

1. Kick-off
2. Planning
3. Technical alignment
4. Management
5. Shutdown execution
6. Technical report
7. Lessons learned

Shutdowns as an opportunity driver

Shutdowns are not just the result of careful planning – they create opportunities and drive continuous improvement. Thanks to the repeated success with Voith, Klabin has extended key service contracts, including for the Papermaking 4.0 automation solutions for PM 9 and infrared dryers, paving the way for greater efficiency, better machine operation and more energy-efficient contactless drying at the Monte Alegre unit.

2024 shutdown under the microscope

For the October 2024 shutdown, 20 Voith Service team members coordinated operations across 10 machine fronts, managing a 100-strong workforce with seamless precision. The level of service has evolved over the past decade, driven by key customer-focused developments at Voith, including:

Automated order processing
A peer-to-peer ERP connection (EDI/SAP) between Voith and Klabin automates and speeds up order processing.

Optimized shutdown planning
Voith’s structured seven-point planning cycle ensures that maintenance opportunities are identified that improve energy efficiency, reduce fiber loss and minimize water consumption.

Daily on-site meetings
During the shutdown, morning and evening check-ins enhance safety and drive continuous improvement in maintenance activities.

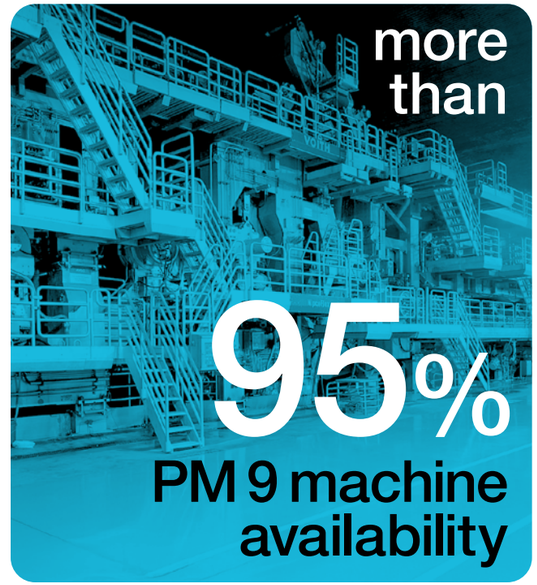
Real-time progress tracking
Daily reports keep maintenance on schedule and prevent delays.

Express in-house repairs
Seamless coordination between the plant and the Voith Service Center in São Paulo enables rapid in-house repairs of larger equipment and parts, minimizing downtime.

Mill Resident services
Voith experts sharpen and grind blades on site, optimizing cutting performance. At the same time, the Mill Resident strengthens customer relationships.

Together

For Voith, long-term service agreements represent a commitment to become an integral part of a customer’s maintenance history and strategy. They allow Voith to leverage in-house expertise and a deep familiarity of the production site to optimize processes, improve paper quality and drive overall efficiency for customers. The close, decade-long collaboration between Klabin and Voith exemplifies how a shared history and a mutual goal of papermaking excellence can drive performance. Both teams work in sync to turn every scheduled maintenance shutdown into a powerful opportunity. Every joint decision is seen as a chance to raise the bar in the pulp and paper industry. And, thanks to Voith’s planning cycle, the shutdown is treated as a mutual strategic project that generates significant value for customers, rather than as a routine maintenance activity. This allows the Voith team to meticulously address every section of the production line and consider the paper machine’s full history – as well as past maintenance actions and future steps – to enhance runability and performance. By combining Voith’s proactive full-line supplier maintenance expertise with Klabin’s operational and excellence vision, the partnership unlocks critical safety, productivity and efficiency gains.



Close collaboration during the seven-step cycle leads to record efficiency.

Once approved, the process moves to the **kick-off.** The goal here is to ensure that everyone is on the same page. Next comes **planning.** This focuses on the efficient use of resources, accurate scheduling and cost-effective management of spare parts. It’s followed by the **technical alignment** phase, where tasks and responsibilities are clearly defined. The phase directly before the shutdown covers **management,** which involves the continuous oversight and review of workforce coordination, service scheduling, safety procedures and spare parts delivery. The customization of the shutdown service doesn’t end there. Every report, all meeting materials – and even how the parts are packaged – are both standardized and personalized. This ensures the best customer service while facilitating communication and reducing touchpoints. The result? Optimized processes at every step.

This systematic process enhances safety, ensures timely delivery of resources and enables a seamless execution of the **shutdown,** which is the ultimate goal on the continuous cycle.

“Each shutdown is planned, prepared and executed in close collaboration,” adds Almeida. “With the help of precise planning and Voith expertise, the PM 9 machine is operating at record efficiency.”

Innovative coatings, sealants and adhesives are vital for creating flexible packaging applications that deliver high functionality with greater sustainability. The challenges in implementing such solutions are constantly evolving, as are the opportunities. Christin Noack, a packaging expert with over a decade of experience working with partners along the entire value chain – most recently as the Market Strategy Manager Europe, Packaging Adhesives and Coatings at Henkel – has the details.

Collective impact



coatings



adhesives

Christin Noack, your expertise in sustainable packaging spans diverse sectors. What common trends do you see across industries?
The big one is sustainability, which comes with changing legislation. The EU Packaging and Packaging Waste Regulation (PPWR), for instance, is facilitating a shift to paper or bio-based packaging and fully recyclable solutions. The pandemic is officially over, but the COVID trends around hygiene and e-commerce remain. Applications that extend shelf life are always in demand, while our changing lifestyles have created new demand for on-the-go packaging for food and coffee, increasingly for paper-based options with robust barrier properties. These trends all require advanced materials that blend convenience, functionality and sustainability.

What does sustainable flexible packaging mean to you?
Sustainability means both resource protection upstream, which our partners can ensure through internationally recognized certifications including FSC, and the responsible management of waste downstream. In addition, sustainability is ensured through optimized consumption and the use of lower temperatures in the application process of Henkel products. Whether flexible packaging is made of plastic or paper – Henkel is a solution provider for both – it needs to be designed to minimize waste, facilitate recycling and reduce emissions along the entire value chain.

Where do you see the greatest challenges in developing solutions for the circular economy?
Barrier coatings offer critical humidity, oxygen and grease protection, ensure sealability and prolong shelf life, but as soon as you are no longer working with monomaterials, recycling becomes a challenge. Better infrastructure is needed at scale to address this – including at paper mills – which will increase the availability of recycled fibers to meet the growing demand.

Like Henkel, Voith is an active member of 4evergreen, a cross-industry alliance focused on creating guidelines to improve the design, recycling and circularity of fiber-based packaging, targeting 90% recycling by 2030. How important are such collaborative initiatives in your view?
It's essential that every member of the value chain works together to achieve sustainable innovation in paper. Clear guidelines on how to design sustainable packaging are drastically needed. To this end, Henkel is also working together with the cyclos-HTP Institute, one of Europe's leading independent institutes for recyclability testing and certification. In my view, the entire value chain for flexible packaging has a common sustainability goal. Our challenges are interconnected, so we have to work together to influence more parts of the chain to make it happen.

Together

Industry-wide and cross-sector collaboration is essential to develop flexible packaging solutions with a lifecycle that aligns with market trends, consumer demands, business goals and climate action. Key areas include:

Bundling of expertise
Initiatives that bring together a wide range of experts in the field – including material scientists, process experts, equipment suppliers, papermakers and consumer brands – are vital for addressing sustainability challenges. Such initiatives allow the paper industry to refine and scale sustainable solutions while maintaining performance standards.

Pilot facilities for the full lifecycle
Testing for barrier functionalities and recycling capabilities under real-world conditions is a prerequisite for developing flexible packaging. At the Voith Paper Technology Center in Heidenheim, domain specialists are working together with customers to develop innovative paper-based packaging as an alternative to plastic packaging. In parallel, at the Voith Fiber Technology Center next door, the recyclability of these new solutions is also tested.

State-of-the-art infrastructure
As a full-line supplier, Voith has unparalleled expertise in designing and building resource-efficient production lines that support the entire lifecycle of flexible packaging solutions, including the recycling of recovered paper.

"It's essential that every member of the value chain works together to achieve sustainable innovation in paper."

Christin Noack
Packaging expert





sealants

together

“We’re making it easier for people on the front line to deal with the complexity of modern papermaking. There are no excess tools. There’s no overload.”

Ulf Grohmann
Director Product Management Autonomous Mill,
Voith Paper



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