

## nextlevel

by Voith Paper — N° 08

PAPER  
IS  
ON!

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**Speed-up, Start-up**

Strong collaboration leads Voith and Sun Paper to complete the PM 2 in a world-record-breaking 18 months

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**Team Energy**

A customized BlueLine OCC stock preparation line offers low-energy, high-capacity performance for Papierfabrik Palm

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**Paper is ON!**

The convergence of expertise, machinery and digital technologies sets Voith in the lead of Papermaking 4.0

# Let's make papermaking digital

Meet the digital trailblazers in the paper industry co-creating tangible and sustainable results for leading papermakers





Dear Readers,

We are turning the spotlight on the people behind the impactful benefits of Voith innovations. In this issue, we are proud to highlight their passion, expertise and commitment to delivering the results that matter most to our customers.

First up, our cover story explores the origins and impact of Papermaking 4.0 solutions. It's told by the people who are driving the digital transformation of the paper industry. The spectacular and personal images capture the excitement and our forward-looking approach to future-proofing the papermaking industry – with resounding success.

Elsewhere in this magazine, our customers share important insights into how we are helping them realize the full potential of paper with resource-efficient production lines. Highlights include the record-breaking start-up of a cutting-edge, high-speed cartonboard machine for Sun Paper in China as well as the tailored design and implementation of an innovative, energy-efficient BlueLine OCC stock preparation line for Papierfabrik Palm in Germany. Discover also how we support the circular economy and sustainable papermaking with our timely rebuilds and customized conversions around the globe.

We hope you enjoy reading a more personal side to our success stories.

*Andreas Endters*

Andreas Endters  
President & CEO Voith Paper



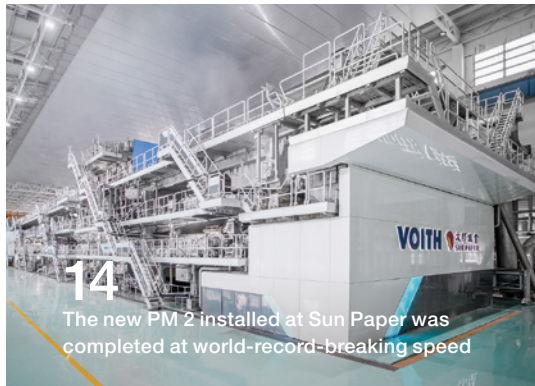
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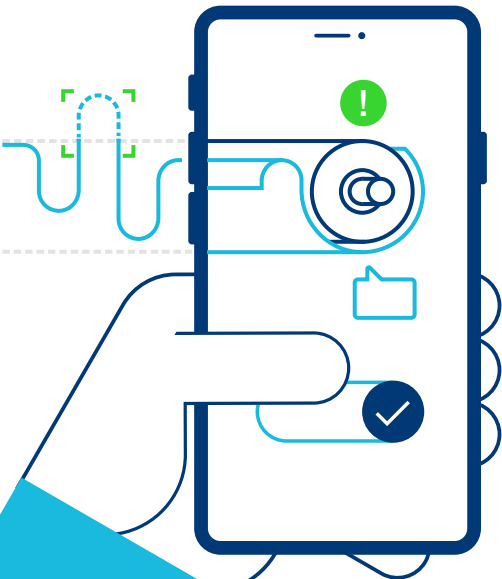
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With a sleek design that helps to improve efficiency while saving valuable raw materials, Voith's new EdgeSaver represents an important step in sustainable papermaking.

1

Unique blade design offers simple, energy-efficient web edge adjustment, directly in the headbox jet



2

Innovative technology eliminates need for high pressure or fresh water for edge cutting

3

Optimized and patented blade geometry delivers perfect jet separation

EdgeSaver benefits at a glance:

- Significant savings on high-quality pulp grades
- No high pressure or fresh water required for separation
- Flexible and easy adjustment of headbox jet width
- Fast return on investment
- Suitable for headboxes of all manufacturers
- Service position for quick wire changes and maintenance
- Adjustable while the machine is running

# A Cut Above the Rest

At an early stage of dewatering, Voith's new EdgeSaver kicks into action. The innovative new technology, for which Voith has recently filed two patents, makes contact at the point in the process when the suspension has not yet hit the wire. Namely, to set new standards in efficiency, waste reduction and sustainability.

"The New EdgeSaver is not a classic edge deckle at all," says Hannes Slawik, Global Product & Service Manager at Voith. "It is a novel edge trim concept; both a fiber-saving unit and a web width adjustment system." Unlike any other device, EdgeSaver stabilizes the web edge directly in the headbox area, eliminating the need to use high pressure or fresh water for edge cutting. "Moreover, the deckle sealing can be adjusted over its entire length," notes Slawik. "Even mid-production, which has never been done before." All these innovations represent an important step in sustainable papermaking. Previously, any fibers that exceeded the required paper web width would have been lost in the couch pit. With EdgeSaver, valuable raw material is discharged before the suspension reaches the wire, enabling it to be saved. Furthermore, its S-shaped adjustable side shield helps to minimize edge waves, improving edge stability. And since the easy-to-install solution is not restricted to Voith systems, even customers with existing machines can take advantage.

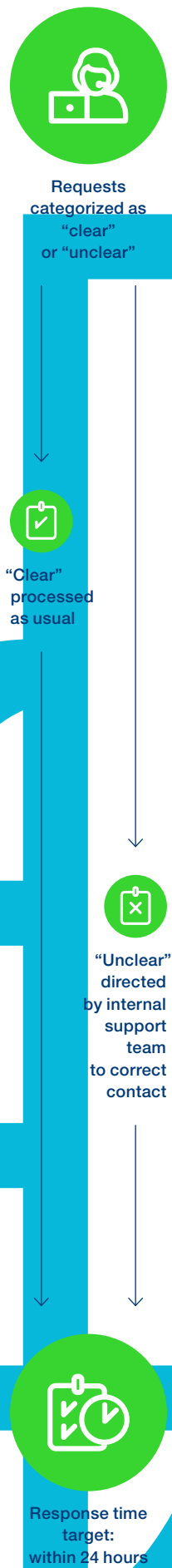


New tool elevates  
Voith customer service

Responses to all requests within 24 hours? That is the target set by Voith’s ambitious new service request online form and ticketing system. The new tool makes entering and processing every service order easier and faster, irrespective of which Voith ERP system is involved. The tool allows Voith to better analyze all service requests due to a distinction being made between “clear” and “unclear” requests. “Clear” inquiries are addressed immediately, as is the case today. In a new addition, “unclear” inquiries will henceforth be forwarded directly to the right point of contact by the internal Voith support team. As a result, the online form now offers customers a convenient and effective way to make an inquiry, even when they are uncertain who to contact. And, to further increase customer satisfaction, Voith has set a target of responding to all requests within 24 hours.

Brazil installs 300th  
DuoShake

Voith is celebrating a new milestone: the 300th DuoShake system to be delivered to a customer. The recipient: Brazilian paper manufacturer Santa Maria. The Parana-based company is the latest to have installed the cutting-edge technology, which increases the tear strength of paper across the web by enabling an improved alignment of fibers through heterogeneous shaking. A compact and robust design allows DuoShake to be easily integrated into the forming section, while its improved dewatering of fibers reduces production costs. The milestone installation has further established Voith as the full-line supplier in the paper industry.



# News

from the world  
of Voith Paper

## TailFix – for more efficient winding

Voith’s new automatic outer layer web gluing system promises to increase reeling process efficiency while driving productivity across the whole production line. TailFix reliably fixes loose paper ends in the edge area of the parent roll, helping to prevent issues including flying paper shreds, paper breaks, rejects and malfunctions. Its specially developed cold glue has a fast and powerful adhesive effect while meeting essential environmental and food safety requirements, enabling it to be repulped without leaving residues. Moreover, TailFix boasts an inventive space-saving design to ensure easy installation. “With the help of TailFix, we have been able to significantly increase our work safety and machine efficiency during reeling,” says Hongtao Li, Production Manager for Shanying Huazhong PM 22. The solution can be effectively combined with the EcoChange W turn-up system, which offers a significant increase in machine performance and is already being used by several customers around the world.

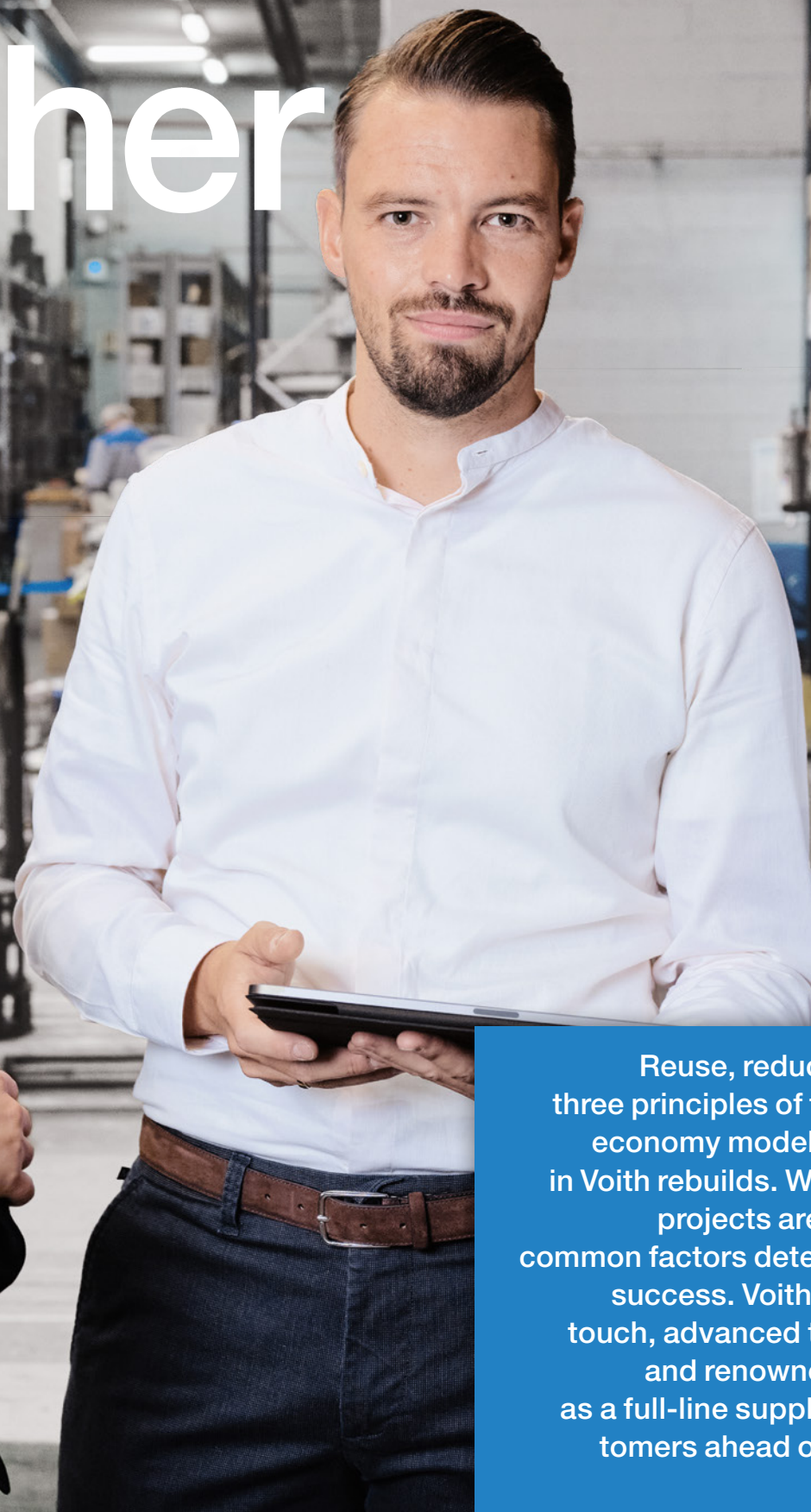


## #Full-line supplier

Discover the potential of  
holistic papermaking solutions.  
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# Rebuild together



Reuse, reduce, recycle: three principles of the circular economy model play a role in Voith rebuilds. While no two projects are ever alike, common factors determine their success. Voith's personal touch, advanced technology and renowned position as a full-line supplier put customers ahead of the curve.



#### Combined forces:

Paola Rubiano,  
Commercial Risk Manager, Voith;  
Philip Schnellinger,  
Product Manager Process Technology Paper, Voith;  
Maciej Skupinski,  
Project Manager, Schumacher Packaging.

"With our full support, leading paper manufacturers are in a position to extend, optimize and transform the lives of their paper machines," explains Philip Schnellinger, Product Manager Process Technology Paper at Voith. "Whatever the driver for a rebuild, the desire for a grade conversion or plant modernization often goes hand in hand with a push for sustainability," he says. How that works in practice depends on the customer, the circumstances and the dedication of the teams.



**Co-creating transformation in Spain**

One transformative rebuild is underway in Rentería, Spain, for Papresa, the leading southern European manufacturer of newsprint paper. Supporting the company's strategic goal to produce packaging grades sustainably and efficiently, Schnellinger has been heavily involved in the grade conversion of the PM 5 from newsprint to containerboard. As has Paola Rubiano, Commercial Risk Manager at Voith. Their open style of communication has built enormous trust with the Papresa team. "It's essential that everyone feels we are building a future together," explains Rubiano. "Our needs and the needs of our customers are a common project." Schnellinger has the same view. "Our trustful relationship means we co-create tailor-made solutions in close cooperation with our customers," he says.

Iñaki Sánchez, Mill Manager at Papresa, confirms the team's approach brings results. "The historically strong relationship between Voith and Papresa is important for us," he says. "We needed a technological partner with great knowledge of our facilities and requirements, as well as extensive experience rebuilding paper machines with sustainability in mind. Our own skills and assets are furthered strengthened by Voith's digital expertise and capacity as a full-line supplier."

**Output optimization in Poland**

Sustainability also plays an important role in a major rebuild for Schumacher Packaging in Poland, a corrugated board producer and full-range supplier of paper-based packaging solutions. The company's strategic goal is to increase production output sustainably at the company's Myszków plant and thereby secure a smooth supply chain of paper to their packaging division. The state-of-the-art rebuild of the PM 2, due for start-up in mid-2023, will double its production capacity from 500 to 1,000 tons per day. Combined with Voith's BlueLine stock preparation technology, which was installed in 2018, the technology will ensure a minimal impact on the environment. "Such an ambitious project with the shortest shut-down time relies on Voith's technological expertise and a trustful working relationship," says Maciej Skupinski, Project Manager at Schumacher Packaging. "From conception

through to implementation, we are confident we are in the most competent of hands. I cannot praise the team enough for their dedication to our goals."

As with any Voith rebuild, risk management assessments are carried out early on. "The reason why we are open about our risks is so that the customer feels comfortable being honest about theirs," explains Rubiano. "That way we can be very proactive at proposing solutions that can be good for both parties. In my view, fairness is the key point of every negotiation, which should be based on mutual respect, on balance and on a win-win relation." Schnellinger agrees. "Performing pre-engineering, bottleneck analysis and troubleshooting in advance gives everyone a better feeling of what's possible and where the critical areas lie," he adds.

PL

**Schumacher Packaging**

Forming section upgrade to DuoFormer D, a new headbox MasterJet Pro and DuoShake DG 800 ensure the necessary dewatering capacity and final paper quality.

US

**Domtar**

A unique MasterJet Pro headbox for a 2-layer application, designed to operate as a 3-layer application in the future.

**Supporting circularity in the U.S.**

Reuse and recycling are central to Domtar's Kingsport Tennessee Mill conversion project in Tennessee, U.S. This is the company's first venture into the packaging business and will involve a massive undertaking to overhaul the former paper mill and turn it into a best-in-class 100 percent-recycled packaging facility. Every aspect of the site has been planned with sustainability and circular economy principles in mind. When completed in late 2022, the mill will be home to the second-largest recycled containerboard machine in the U.S.

With so many interfaces to existing equipment, it's important to define the scope, recognize any possible technical risks, and place the later execution of the project in the best position for success. This is especially true when the original machine or components are from a third party, as Schnellinger highlights. "In this case, for instance, 3D scans provide an accurate 'as built' image of the existing machine,

which makes for an efficient design process," he explains. "It saves cost by reducing the amount of measurement trips and provides the necessary accuracy of design, especially in cases where the machine modifications have not been fully documented. This ensures a smoother running of the project." As Charlie Floyd, Vice President Packaging Capital at Domtar, is keen to point out, good communication supports Voith's technical expertise. "The cooperative and communicative spirit in the Voith team and their full and early engagement in finding suitable innovative solutions confirms that we have chosen the right partner," he says. "Given the especially challenging times that we are working in, the level of communication and transparency throughout this project has been vital to success. There is no doubt that our open relationship will result in a better finished product."



**Quality check:**

Ignacio Benito, Head of Applications & Engineering, Voith Paper Spain; Iñaki Sánchez, Mill Manager, Papresa.

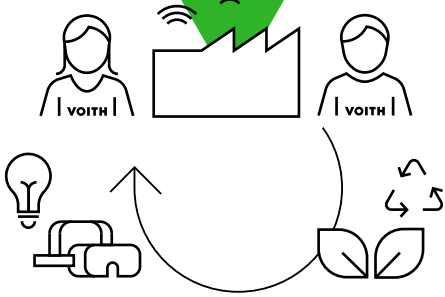
ES

**Papresa**

Press section upgrade to DuoCentri NipcoFlex concept, increasing the dry content after press, significantly reducing steam consumption and boosting production capacity.

**Circularity in action**

The circular economy model strives to reduce the use of resources throughout the life cycle of a product. By optimizing and extending the life of paper production lines, Voith rebuilds support key circularity principles.

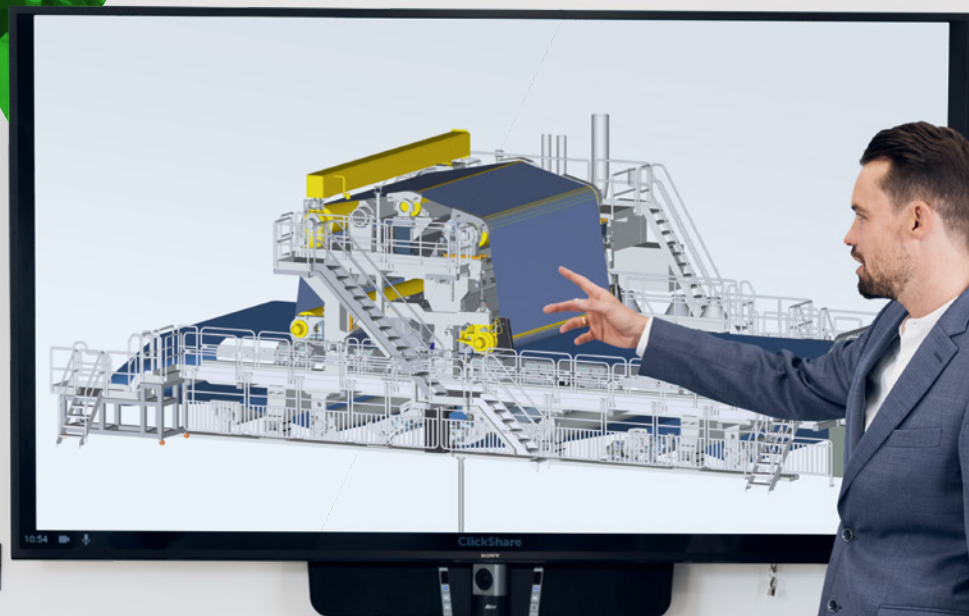






“The historically strong relationship between Voith and Papresa is important for us. We needed a technological partner with great knowledge of our facilities and requirements and extensive experience rebuilding paper machines with sustainability in mind.”

Iñaki Sánchez  
Mill Manager, Papresa



“Our trustful relationship means we co-create tailor-made solutions in close cooperation with our customers.”

Philip Schnellinger  
Product Manager Process Technology Paper, Voith

“The cooperative and communicative spirit in the Voith team and their full and early engagement in finding suitable innovative solutions confirms that we have chosen the right partner.”

Charlie Floyd  
Vice President Packaging Capital, Domtar

#### Key results in China and beyond

Not all rebuilds are as massive in scale as the Domtar project. Some set records for other reasons. In China, for instance, Schnellinger recently worked on a successful press rebuild design for Jiangxi Five Star Paper. “We are really impressed by the outcome of Voith NipcoFlex shoe press rebuild,” confirms Yanchen Zhang, Vice General Manger of Jiangxi Five Star Paper. “It brings remarkable improvement in higher dryness level and cost-savings for machine maintenance, as well as reduces carbon emissions with high efficiency.” With the completion of this project, Voith has now notched up more than 30 successful rapid rebuilds in a row in China with NipcoFlex shoe press technology. Other notable large-scale rebuild and conversion projects were in Japan, Indonesia, South America and Scandinavia. Although each is unique, there are common threads running through all: “Our successful track record comes from open and transparent communication,” believes Schnellinger. “And innovative solutions that minimize risk from the start. As a team, we ensure the outcome is completely aligned with the customer’s strategy and sustainability goals.”



#### Close collaboration:

The key to smooth rebuilds and future operations at Papresa.



Martin Jauch  
Senior Vice President Global Rebuilds, Voith

“We keep the paper machines alive.”

## Unlock hidden values

#### What’s driving the demand for rebuilds?

Our customers are typically looking to reposition their assets to produce new, higher demand grades, to switch to economical raw materials or to become more sustainable and gain competitiveness. When rebuilding paper machines, our customers are also seeking to improve their carbon footprint, sustain their business and increase profitability. Looking at market trends, we’re seeing growing demand for lightweight packaging paper grades and increased digitalization. Our solutions therefore target energy and water consumption, boost quality and efficiency, and ensure a safe working environment. We keep the paper machines alive!

#### Why choose Voith to optimize a paper mill?

Rebuilds and conversions are challenging. Working with existing assets has severe limitations, such as the building constraints, mill layout and available space and energy sources of a plant. Our long-term experience as a full-line supplier, pre-engineering expertise and digital know-how bring cost-effective and resource-efficient results for the long term. We provide intelligent, creative solutions that ultimately unlock hidden values.

#### What’s the key to Voith’s impressive record?

By providing technological expertise at the earliest stage, we ensure the business case, scope and concept are clearly defined, avoiding unnecessary time and cost overruns. Our expert support covers all project phases, from planning to start-up and beyond. Whether it’s a grade change or the desire to gain a competitive edge with an existing paper grade, the personal support via our rebuilds capability ensures a short shutdown and a fast speed up.



#### Jiangxi Five Star Paper

The press section renewed and equipped with Tandem NipcoFlex technology, increasing the dry content and capacity to a maximum, while reducing the specific steam consumption.



Follow the progress of these projects on LinkedIn. Scan the QR code and Philip Schnellinger will keep you up to date.





# SPEED START

World records are not set every day. With the completion of PM 2 in Beihai, China, in just 18 months from contract effectiveness to start-up, Voith and Sun Paper have achieved the fastest order execution for a high-speed line of this type.

# UP UP

In Beihai, southeastern China, stands the new high-speed cartonboard machine, which has already set a new world record before production starts. Only 18 months elapsed between the contract effectiveness and the successful start-up of the large machine. This sounds incredible, as Sun Paper's Beihai PM 2 shines in the latest industrial design and is also groundbreaking in all other features, as Robert Osswald, Voith Paper's Project Manager, points out: "Beihai PM 2 is a marvel of engineering. With a maximum operating speed of 1,300 meters per minute, it produces over one million tons per year of high-quality folding box-board with a basis weight of 170 to 350 gsm. Combined with the visionary design, the line is the most advanced of its kind in the world."

When Sun Paper shook hands with Voith for a complete new line, the Covid-19 pandemic had just broken out and lasted for the entire project duration. It was no easy undertaking to meet the ambitious project execution schedule. In addition, there were considerable logistical problems during the project phase due to unpredicted pandemic restrictions around the globe. How were the more than 200,000 parts of the half-kilometer long paper machine to be transported to the Beihai site? Thanks to excellent supply chain and project management, the components found their way to Beihai by roads and seas within the deadline. Nearly 3,000 people worked on site at the same time to ensure a smooth start-up. High flexibility, close coordination and additional shifts made it possible that only seven and a half months passed from installation to start-up. "Thanks to the dedicated work of the two teams, we kept our promise to the customer and made the impossible possible. Out here, we therefore call it 'Sun Paper speed,'" says Miao Zhuang, Project Manager at Voith Paper China. The two companies have been working together for years and have already successfully commissioned 12 XcelLine paper machines. The 'Sun Paper speed' is already well known: In January 2021, Voith and Sun Paper were able to set the fastest start-up record of 1 hour and 46 minutes on the Laos PM 2 cartonboard machine.



**Location:**  
Beihai City, Guangxi Province, China

## Only 18 months

nextlevel N° 08

## World record for fastest order execution

Full-line supplier 15





**Production:**  
High-quality folding  
boxboard with a  
basis weight of 170 to 350 gsm



**Excellent cooperation:**  
Voith has already supplied  
12 paper machines to  
Sun Paper including the Beihai PM 2



**Big Player:**  
Sun Paper is ranked  
among the world's 30 largest  
paper manufacturers

**“We greatly appreciate the partnership and commitment of Sun Paper and Voith. From the record for the fastest start-up of PM 1 in Laos to the world’s fastest project completion of PM 2 in Beihai, together we have set one world record after another.”**

**Li Lu**  
Chairman of Sun Holdings

The Beihai PM 2 will help broaden Sun Paper’s product portfolio and strengthen the manufacturer’s position in the diversified paper business in Southeast China. “We greatly appreciate the partnership and commitment of Sun Paper and Voith,” says Li Lu, Chairman of Sun Holdings. “From the record for the fastest start-up of PM 1 in Laos to the world’s fastest project completion of PM 2 in Beihai, together we have set one world record after another.”

“Beihai PM 2 produces high-end cartonboard with excellent surface quality and formation,” adds Ying Guangdong, Vice General Manager and Chief Engineer at Sun Paper. “It gained a good reputation among customers as soon as it was launched in the market. Voith Paper machines not only provide excellent performance in terms of pulp, water and energy savings, but they also optimize production line efficiency and improve paper quality, which has helped the Sun Paper Beihai site to become a low-carbon, high-tech project of the highest standards.”

Like clockwork, all parts of the paper machine are perfectly harmonized with each other and contribute to the outstanding performance. The tailor-made design includes leading components from Voith’s full-line portfolio, such as a DuoFormer for excellent formation and strength as well as two VariFlex high-performance winders for highest quality. The new industrial design ensures optimized maintenance and work safety. In addition, Sun Paper also benefits from Voith’s leading expertise in digitalization and automation for additional efficiency gains and cost reductions. The Voith sophisticated QCS quality control system as well as MCS enable complete control over the entire production line. OnCare.Health condition monitoring is also integrated to the system. Thanks to over 30,000 interfaces, problems can be identified at an early stage. Planned and unplanned machine downtimes can thus be prevented by continuous monitoring.

Scan to watch the video  
about the remarkable  
Sun Paper PM 2 project.



## Made to order

The XcelLine paper machine was tailor-made with a focus on the efficiency and robustness of individual components:

- DuoFormer: excellent formation and strength, even at very high speeds
- SpeedSizer: uniform application of the film during gluing and coating, for an optimal paper surface
- CombiDuoRun dryer section with EvoDry steel dryer cylinder: maximum runability and energy efficiency
- Two VariFlex high-performance winders: maximum quality
- QCS and MCS quality control system and OnCare.Health condition monitoring solution: complete control and continuous monitoring to minimize machine downtime

**Bu Ning**  
Deputy General Manager of Sun Paper



**Guo Yalong**  
Project Director of Sun Paper Beihai PM 2



**With our advanced technology, high-quality products and excellent service, Voith and Sun Paper share mutual benefits in a win-win situation. Together, we create a more efficient and sustainable future for the paper industry.”**

**Kurt Yu**  
Regional President Asia, Voith

“From Yanzhou PM 21 to the successful overseas projects of Laos PM 1 and PM 2 to the smooth start-up of Beihai PM 2, Sun Paper and Voith have established a long-term partnership with great trust,” sums up Kurt Yu, Regional President of Voith Paper Asia. “Sun Paper and Voith shared the value of pursuing excellence through continuous improvement. With our advanced technology, high-quality products and excellent service, Voith and Sun Paper share mutual benefits in a win-win situation. Together, we create a more efficient and sustainable future for the paper industry.”

High-speed line in the latest industrial design  
with a production of over  
**1,000,000 tons/year**

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and an  
operating speed of  
**1,300 m/min**

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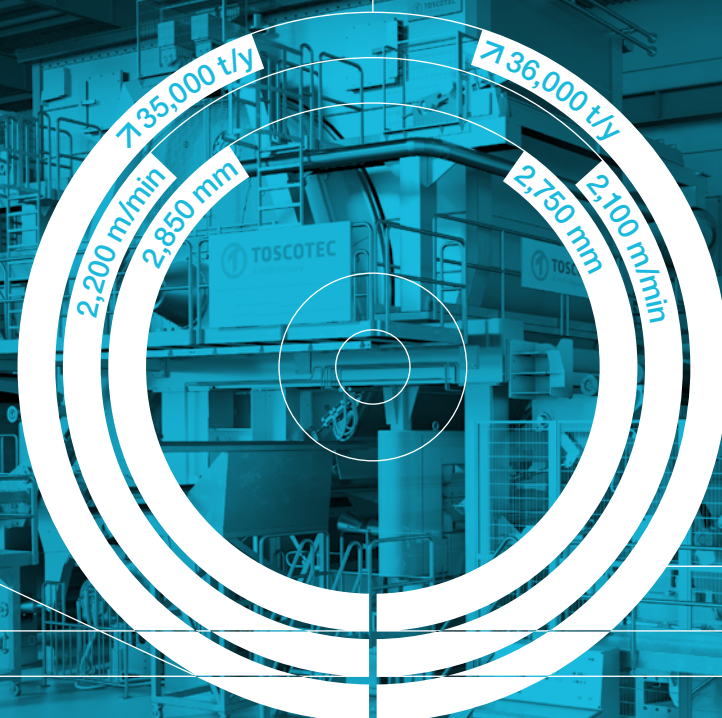


## AHEAD 2.2

Cartiera Confalone  
Italy

## AHEAD 2.2

WEPA Piechowice  
Poland



Sheet trim width

Design speed

Production capacity

Sheet trim width

Operating speed

Production capacity

Toscotec's AHEAD turnkey systems deliver cutting-edge efficiency

Two recent turnkey installations in Italy and Poland highlight how customers can benefit from Toscotec's production-ready systems.

### Italy: A sizeable investment

From the first day of operation, Italian paper manufacturer Cartiera Confalone could commence sellable tissue production with its new AHEAD 2.2 tissue line. This was because market-leading Voith subsidiary in tissue, Toscotec, had delivered a cutting-edge turnkey system – one equipped with a TT NextPress, a TT SYD steel Yankee dryer and a gas-fired TT Hood with multi-stage energy recovery. The results were instantaneous – and impressive. The new line featured a sheet trim width of 2,850 millimeters, a design speed of 2,200 meters per minute, and a production capacity of more than 35,000 tons per year. Moreover, Toscotec provided Cartiera Confalone with a comprehensive service package. "The new Montoro mill was the largest tissue investment in southern Italy in more than 20 years," says Riccardo Gennai, Sales Manager at Toscotec.

### Poland: Exceptional modifications

As well as 20 years of global experience on turnkey projects, a key advantage Toscotec offers customers is a single point of contact and high flexibility. For example, in 2021 the WEPA Group installed an AHEAD 2.2 tissue machine in an existing building at its paper mill in Piechowice, Poland. The building had been constructed for another line, so the dimensions of the production hall weren't compatible. "We modified the design of the Yankee dryer's frame to be able to reduce the height of the machine," says Stefano Raffaelli, Project Manager at Toscotec. As a result, WEPA could install a new line with a sheet trim width of 2,750 millimeters, a maximum operating speed of 2,100 meters per minute, and a production capacity of more than 36,000 tons per year. "The excellent collaboration with WEPA allowed us to successfully implement this complex project," Raffaelli says.

## 20 years of partnership

One hallmark of a successful business partnership is longevity – and after 20 years of collaboration, this is one characteristic Voith and CMPC are proud to celebrate.

Time flies when you're collaborating well. This is true for Voith and the Chilean paper manufacturer CMPC. The companies recently celebrated the 20th anniversary of partnership, as the PM 20 installed in Puente Alto, Chile, completed its second decade in operation. The Voith machine, which produces various paper products – including white top liner, testliner, corrugated cardboard boxes, as well as wrapping, packing and laminated papers – is still going strong.

It is a collaborative environment that has been instrumental since the start of the Papeles Cordillera project and strengthened by weekly visits from Voith staff as well as annual, jointly planned shutdowns. During the shutdowns, the companies run deep-dive analyses on the machine and identify any additional services required. Moreover, a multi-disciplinary Voith team from Chile and Brazil meet with their CMPC counterparts regularly throughout the year to discuss engineering, maintenance and production issues.

"Over the past 20 years, we have made every effort to deliver unique conditions to our customers in the region," says Antonio Lemos, Regional President of Voith Paper South America. This effort appreciated by customers like CMPC, who value Voith's reliability and proactive problem-solving as much as its technical support. For Voith, the 20-year milestone has fortified its place as a professional and trustworthy full-line supplier – in many cases, for decades. An achievement truly worthy of celebration.

# Team up!

PM 20 in Puente Alto, Chile, has been successfully producing various paper grades for 20 years.



# Next Level Planning

The latest technology, multifaceted teams, agile working methods – pre-engineering not only offers unmatched transparency and collaboration, but an entirely new way of experiencing the critical planning stages of a project.

## A blueprint for success

- 1 Project goal defined
- 2 Concept developed with customer
- 3 3D scan of existing line made and concept fixed
- 4 Modified machines and plant components installed in 3D model
- 5 Relevant elements (pipelines, chests, air ducts, etc.) identified and added to model
- 6 Pipelines to be removed marked and new pipelines planned
- 7 Details of conversion, accessibility and requirements discussed with customer
- 8 Final version viewed with 3D glasses or AR
- 9 3D visualization helps in cost calculation and installation planning



"Being able to experience a rebuild in advance – through a 3D model or, even better, with 3D glasses – takes planning to a whole new level," says Heiko Held, Vice President Product Management Engineering at Voith. As one of the members of a Voith project team that incorporates immersive technologies into a collaborative new work model, it is a subject he knows well.

At Voith, pre-engineering offers a glimpse into the future during the critical planning stages of a project. Before an order has been placed, novel digital applications – such as 3D scanning and virtual and augmented reality – are utilized to build on 2D plans. "3D layouts are created, possible collisions identified, and solutions found," Held explains. Importantly, it allows Voith to enter into vital discussions with customers, increasing planning reliability and accelerating project commencement.



However, technology is only one part of the pre-engineering equation. The coming together of diverse perspectives, the other. At Voith, this is achieved by pairing longstanding industry experts with digital natives to combine decades of industry knowledge with digital know-how in new agile ways of working.

"The exchanges are vital to the success of the project," says Tobias Henle, Global Layout Expert, who is part of Held's layout team. "Both groups learn from one another and bring customers into that dialogue." As a result, customers are engaged at the most critical stage of the project, driving greater transparency, quality and a much more immersive – and effective – experience for all.

## #Sustainable Papermaking

Discover the potential of sustainable papermaking.

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Bernd Ziegler, Manager Electrical Engineering, Papierfabrik Palm;  
 Stephan Gruber, Chief Technology Officer, Papierfabrik Palm;  
 Dr. Michael Trefz, President Projects, Voith;  
 Roland Rauch, Project Manager, Voith;  
 Dr. Andreas Haas, Chief of Engineering, Papierfabrik Palm;  
 Andreas Tiffner, Manager Automation, Papierfabrik Palm;  
 Florian Schmid, Head of Project Technology, Papierfabrik Palm.



# Team

# Energy



A customized BlueLine OCC stock preparation line for Papierfabrik Palm goes above and beyond the leading papermaker's expectations for sustainability. Unrivaled low energy consumption and a comprehensive AquaLine Flex mill-wide water management system ensure the new Palm Aalen plant sets industry standards in resource-efficiency.

## Minus

10

to

20

## percent



**InfiltraScrewpress** Durable and requiring low maintenance, the InfiltraScrewpress ensures better water loop separation, guaranteeing highly efficient dewatering with minimal energy consumption. Real-world experience confirm that this innovative component reduces energy use by 10 percent to 20 percent.

**IntensaPulper** Thanks to the combination of a special vat geometry and the asymmetric arrangement of the rotor, the internal flow pattern of the IntensaPulper converts the flow energy into pulping performance. This leads to energy savings of up to 20 percent.



## Minus

20

## percent



"Once the new Papierfabrik Palm Aalen plant is at full production, there is no holding back. The BlueLine OCC stock preparation is built for low-energy, high-capacity performance," explains Roland Rauch. The Project Manager at Voith justifiably trusts the best-in-class design to reduce both energy and water consumption at the plant, while also ensuring fiber loss is kept to the minimum required for the desired product quality. And the customer? Stephan Gruber, Chief Technology Officer at Papierfabrik Palm, shares his confidence: "Voith's team earned our trust through commitment, experience and reliability of the BlueLine OCC process," he says. "Thanks to the great teamwork, we were able to reach our goals in a highly efficient way."

As one of the largest and most advanced systems worldwide, the entire BlueLine stock preparation line delivers a reliably high production 24/7, 365 days a year at Palm Aalen, and therefore plays a critical role in the annual production of 750,000 metric tons of containerboard to the defined standards and quality. The total stock preparation capacity is designed for 2,700 metric tons from recovered paper each day and will handle reject contents typical for European recycling grades. Up to 500 metric tons will be produced in an adjacent pulping unit, where Voith's new pulping technology, the Green Pulping Concept, leads to a significantly more energy-efficient pulping of broke from various Palm converting facilities. Moreover, the complete AquaLine Flex water management system for the new plant, incorporating the wet-end process of the paper machine, was designed and installed with the full-line supplier expertise of the Voith and Meri team. "Given that

"Thanks to the great teamwork, we were able to reach our goals in a highly efficient way."

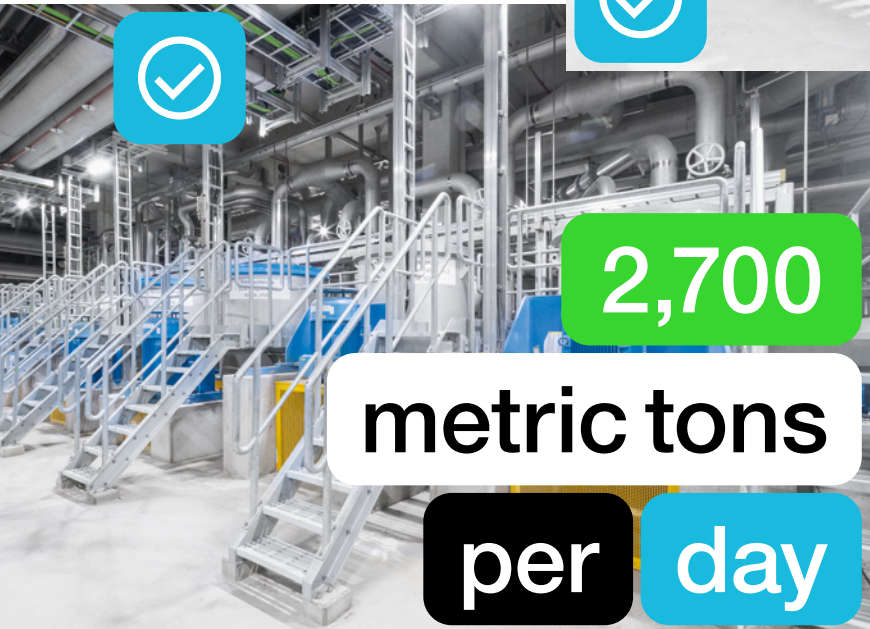
Stephan Gruber  
 Chief Technology Officer, Papierfabrik Palm



“The domain expertise and support of the Voith team are top-notch.”

Dr. Andreas Haas  
Chief of Engineering, Papierfabrik Palm

→ HCL5 EcoMizer Cleaner and InduraClean:  
The BlueLine process for low loss of fiber, minimum wear and efficient heavy particle removal.



2,700  
metric tons  
per day

Fiber loss and stock quality of the total daily production capacity of 2,700 metric tons from recovered paper is targeted via four stages of IntegraScreens with C-bar Q.

sustainability takes center stage at Palm Aalen, the requirements were understandably demanding,” explains Dr. Michael Trefz, President Projects at Voith Paper. “We’re proud to have stepped up to the challenge. The combination of this state-of-the art BlueLine technology with our smart water management system achieves a maximum yield of high quality stock, while setting a new benchmark for the lowest energy consumption in the industry.”

Breaking down the energy savings

The key to the BlueLine resource-efficiency lies with the intricate combination of tried-and-tested sub-systems, proven machinery and advanced automation. The outcome is a well-balanced stock production. The BlueLine OCC solution is a seamlessly coordinated process, which avoids the intermediate chests, additional tanks and agitators that often disrupt operations in conventional systems. This simplified process leads to lower investment costs in pumps, piping and valves and requires less pumping energy overall. Such energy efficiency translates to savings of more than 20 percent compared to conventional facilities. For a plant the size and scale of Palm Aalen, this is expected to result in savings well above half a million euros each year.



500  
metric tons  
per day

Voith’s new energy-efficient pulping technology, the Green Pulping Concept, produces 500 metric tons a day from broke for Palm Aalen.

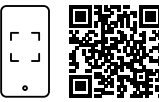
Targeting water consumption and yield

While high energy efficiency is one priority, another is reduced water consumption. To this end, Voith has implemented its automated water management system for both the stock preparation and the wet-end process of the paper machine. “This was a smart move,” believes Rauch. “Our superior water management ultimately reduces water consumption and wastewater throughout the mill and therefore contributes further to the sustainability goals of Palm.” What’s more, the water management process in combination with a special disc filter configuration ensures that only super clear filtrate, with less than 150 mg/l total suspended solids, is discharged to the effluent treatment plant. This allows the anaerobic effluent treatment to operate even without a primary clarifier. “Our approach has the added benefit of keeping fibers in the papermaking process,” adds Rauch, “which increases the overall yield of the plant.” Another unique design feature that targets fiber loss is the grouping of no fewer than four stages of IntegraScreens with C-bar Q. In coarse screening, IntegraScreens with slotted baskets are installed, a concept that is already well established in Voith plants that have recently been started up. The slotted baskets combine good screening efficiency, maximum throughput and substantial energy savings.



150  
mg/l  
total suspended solids

Watch our video to learn more about the Palm Aalen success story!



InfiltraDiscfilter, with maintenance-free BaglessPlus technology, has a special disc filter configuration that ensures super clear filtrate with less than 150 mg/l total suspended solids.

IntensaScreenDrum Advanced drum screening technology keeps fiber yield at a high level.

All for ease of operation and maintenance

“The robust BlueLine set-up is also very easy to use,” highlights Tomislav Druzinec, the Start-up Engineer at Voith for the Palm Aalen project. As the head of the start-up team since the beginning, Druzinec has come to know the operators and their needs up close. The maintenance-free InfiltraDiscfilter with BaglessPlus technology is appreciated on both a service and sustainability level, while the simple design of the InfiltraScrewpress ensures easy maintenance. Another popular topic of conversation at the mill is the ease of operation of the BlueLine system. “This is not accidental,” explains Druzinec. “It allows us to take advantage of an important feature of the overall design: the start/stop control.” Essentially, this combines a strict counterflow principle with smart water cycle separation that is the secret to a fast

start-up after any scheduled or unplanned shutdown of the paper machine. At start-up, the key is to set the parameters correctly so that a chain of events seamlessly cascades to ensure smooth start/stop sequences. “Everything has been perfectly engineered down to the last detail,” concludes Dr. Andreas Haas, Chief of Engineering at Palm. “The domain expertise and support of the Voith team are top-notch. We’re completely satisfied with the professional and friendly teamwork.”

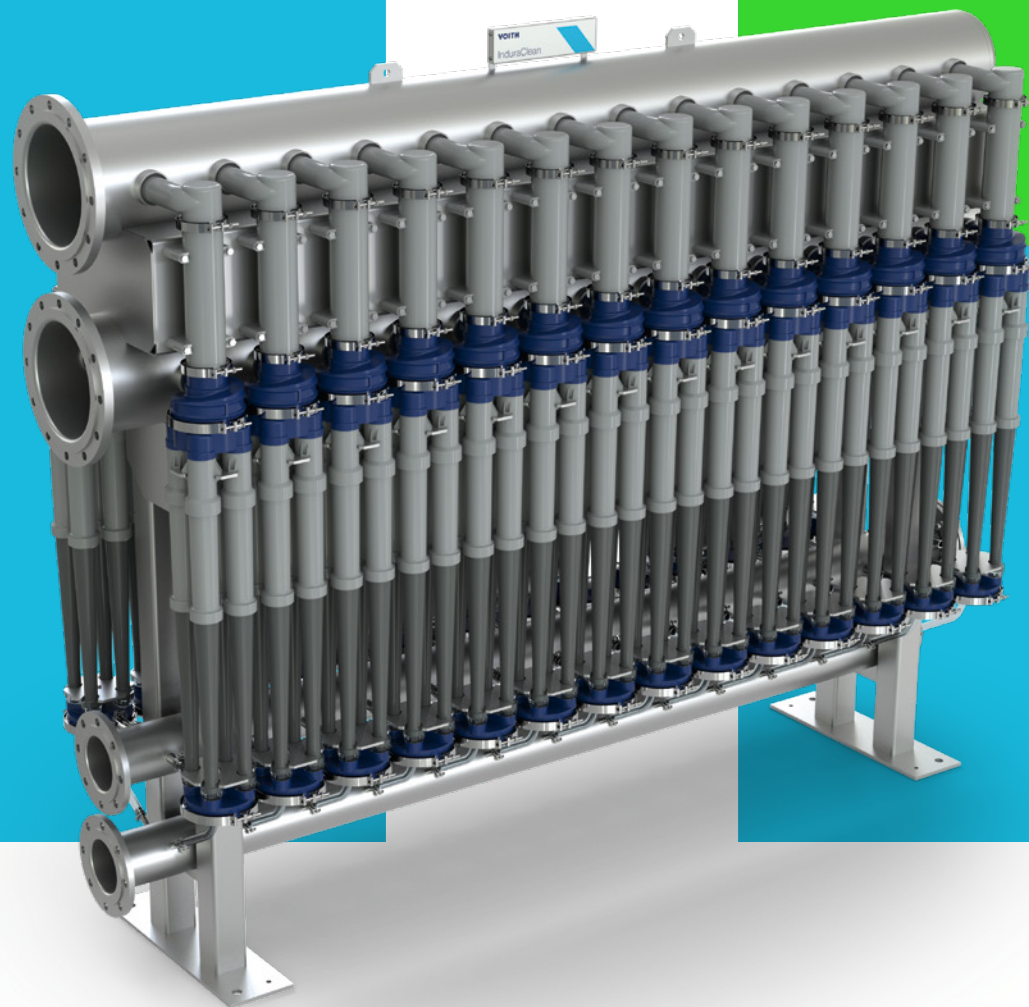


With its highly modular design, Voith's InduraClean family of heavyweight cleaners adapts perfectly to different production needs, delivering new levels of flexibility, efficiency and asset protection in stock preparation and approach flow systems.

# From 1 to 4

## InduraClean cleaner bank

Reinvented for flexibility and efficiency



## InduraClean IDC-5

Based on many years of experience, the proven HCL5, now IDC-5, has been optimized



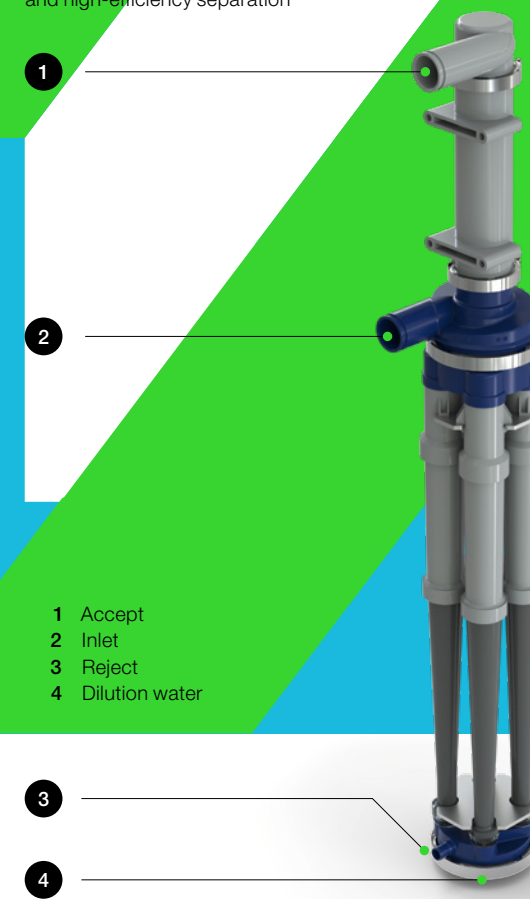
nextlevel N° 08

Stock preparation requires skillful orchestration of multiple subassemblies, systems and processes. Perhaps most challengingly, abrasive contaminants must be extracted or at least minimized. After removing larger particles, the suspension will still invariably contain a variety of impurities. Besides stickies, this typically includes excessive quantities of heavily loaded grades and rejects. While especially true for recovered paper, the same applies to virgin fiber grades.

The next generation of InduraClean systems is a game-changer for the challenging removal of such contaminants. Thanks to the truly innovative modular design, customers attach different types of cleaners to the same cleaner bank in line with their dynamic production requirements – ensuring flexibility that makes it ideal for rebuilds. “Simply by swapping cleaner modules on the bank, the configuration of InduraClean is easily adapted for different needs,” says Thomas Jaschek, Voith's Global Product Manager for WEP & Cleaning. What's more, the new InduraClean product family includes two cleaners optimized for high flow and high quality, the InduraClean IDC-4F and IDC-4Q on top of the widely used IDC-5I and IDC-5C (previously called HiClean HCL5-I and HCL5-C).

## InduraClean IDC-4F and IDC-4Q

Four-cone heavyweight cleaners delivering both high-quality and high-efficiency separation



- 1 Accept
- 2 Inlet
- 3 Reject
- 4 Dilution water

3

4

nextlevel N° 08

“Our InduraClean systems have been reinvented to meet customers' needs for efficiency, flexibility and productivity increase.”

Thomas Jaschek

Global Product Manager for WEP & Cleaning, Voith

## The power of 4

“IDC-4Q and IDC-4F represent a step-change in stock cleaning technology,” says Jaschek. “By combining four high-efficiency cones in a single compact unit that fits into the same cleaner bank distributor slots as common units, they achieve substantially higher efficiency.” Impurities are separated with minimal fiber loss and much lower energy consumption, all within the same small footprint. “Given the modular design, the functionality is easily changed – even during live operations,” he adds. “Our InduraClean systems have been reinvented to meet customers' needs for efficiency, flexibility and productivity increase.”

When production demands high cleanliness for specialty and graphic paper grades, customers select IDC-4Q components, which have a cleaning efficiency equivalent to Voith's popular KS60-type heavyweight cleaners. Recently, one Voith customer converted their system to the high-quality IDC-4Q to remove gift-wrap glitter particles. When ultra-fine separation efficiency is not required, the system allows easy reconfiguration for maximum savings efficiency, with the subsequent reduction on system pressure resulting in 43 percent less power draw.

When the focus is on high throughput for large production runs, customers use the high-flow IDC-4F. Particularly suited for board and packaging paper grades, it has the cleaning efficiency of the HCL5 cleaners but with a much-improved hydraulic efficiency. For one customer, IDC-4F has resulted in an improvement in head loss from 1.5 down to 1.0 bar with the same number of cleaners. Capacity gain and reduced pressure cut energy consumption by over 50 percent. Moreover, fiber loss was cut in half.

## A cleaner bank for all

The modular redesign also covers the cleaner bank, allowing individual cleaners to be isolated and switched off independently for maintenance even during production. It also has a new anti-deposit design and sealing concept. “Not only does the efficiency of the cleaning system protect downstream assets from wear and tear, this innovation also ensures availability and productivity by preventing unnecessary downtime,” says Jaschek. In short, the new InduraClean design is the perfect response to the dynamic business needs of today's customers.



The recycling rate in Europe has increased

from **40.3%**  
to **73.9%**  
since 1991

  
Paper for recycling is rising in relevance

Voith's award-winning OnView.DigitalEye application uses neural network technology to take the guesswork out of the grading process for recovered paper, driving efficiency, cost savings – and sustainability.

# An

Paper for recycling is a precious resource – and rising in relevance. Yet, paper recycling remains a largely analog process. When it is delivered, recovered paper is typically assessed for quality visually, to determine the degree of contamination, and assigned to one of several commercial grades. Occasionally, companies implement more costly solutions for the inspection of incoming goods, but these are also operated manually and lack continuity. As Vera Loher, Voith R&D Engineer and leader of the OnView.DigitalEye development project explains, “Papermakers are currently defining raw material recipes for their respective recycling paper grades without knowing if the actual raw material quality matches what they have defined.”

This is exactly where OnView.DigitalEye comes in.

### From instinct to insight

Voith's award-winning artificial intelligence (AI) application offers unique insights into paper grading, eradicating much of the previously required guesswork. At the heart of the new product is a neural network connected to conventional color cameras. This leverages expert knowledge to learn how to correctly sort recovered paper into its respective commercial grades with a high degree of accuracy. The cameras photograph the bales of recovered paper, while an algorithm calculates essential quality characteristics. Importantly, it all takes place before the paper reaches the pulping process.

**“Papermakers are currently defining raw material recipes for their respective recycling paper grades without knowing if the actual raw material quality matches what they have defined.”**

Vera Loher, R&D Engineer and leader of the OnView.DigitalEye development project at Voith



Vera Loher



Awarded the Ministry for Economic Affairs, Employment and Tourism AI Champions Award in the “large enterprise” category



**Image A:**  
Conventional color cameras photograph the incoming bales of recovered paper

**Image B:**  
Simultaneously, an algorithm calculates paper grades and essential quality characteristics

Moreover, information is continuously processed by OnView.DigitalEye, leading to steady improvement. Customers and experts can use a dedicated app within the Voith OnCumulus cloud platform to inspect and re-label images of bales – providing new training data by which the algorithm can be continuously optimized.

Dr. Linus Friedrich



**“We have received numerous inquiries and struck a chord with papermakers.”**

Dr. Linus Friedrich, Senior Manager R&D Fiber Systems, Technology & Digitalization at Voith

# on sustainability



**“For the first time, manufacturers are able to precisely and continuously determine paper quality, before it is fed to the stock preparation. Thanks to artificial intelligence, facts become apparent far before they take effect in the process.”**

Dr. Jens Haag, Director of the Center of Expertise for Artificial Intelligence & Analytics at Voith



Dr. Jens Haag

As a result, paper manufacturers are offered an unprecedented level of insight. “For the first time, manufacturers are able to precisely and continuously determine the quality of recovered paper, before it is fed to the stock preparation. Thanks to artificial intelligence, facts become apparent long before they take effect in the process,” explains Dr. Jens Haag, Director of the Center of Expertise for Artificial Intelligence & Analytics at Voith.

“The transparency and process safety gained this way gives the paper mill using the system the ability to increase the yield within the stock preparation, while also optimizing raw material quality to meet specific production requirements, thus minimizing manufacturing costs,” continues Dr. Linus Friedrich, Senior Manager R&D Fiber Systems at Voith Paper. Considering that raw materials currently account for 30 percent to 40 percent of manufacturing costs in the production of paper grades made from recovered paper, the potential savings are significant. “Furthermore,” he adds, “process parameters at the paper machine can prospectively be optimized for the specific recovered paper used.”

In this way, OnView.DigitalEye plays an important role in driving the papermaking process towards sustainability and closing the recycling loop.

#### Far-reaching potential

OnView.DigitalEye is currently undergoing final pilot testing. Together with a select group of customers, Voith is working on developing the system into a commercially viable product by the end of 2022. And Voith has already received some early praise for the AI application – in the summer of 2021, it won the AI Champions Award from the Ministry for

Economic Affairs, Employment and Tourism of the German state of Baden-Württemberg in the “large enterprise” category.

“We have received numerous inquiries and struck a chord with papermakers,” says Dr. Friedrich, pleased.

Voith’s ultimate goal, however, is to solve challenges in paper production with automated solutions. Further modules that will help to advance this undertaking, such as reject quality measurement, are currently under development and could be merged into the system in the future.

According to Dr. Haag, the application has far-reaching potential. AI-assisted image recognition is particularly useful for tracking material flows, monitoring production processes, and performing optical quality control of incoming goods or manufactured components.

It should come as no surprise that at present OnView.DigitalEye remains a fundamental building block on the path to automating the entire recycling process, starting at the pulper feed, while simultaneously making it more efficient – and keeping an eye on sustainability.

Raw materials account

for **30%**  
to **40%**

of manufacturing costs in the production of paper grades made from paper for recycling

Dedicated app within the OnCumulus cloud platform allows customers to inspect and re-label images of bales

A neural network connected to conventional color cameras forms the heart of OnView.DigitalEye

# #Efficient Papermaking

Discover the potential of efficient papermaking.

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# PAPER IS ON!

→  
“Papermaking 4.0 is the culmination of our visionary idea to boost machine efficiency and availability using data, increased computing power and sensor technology. A diverse team of engineers, specialists and domain experts turned this vision into a reality.”

Michael Thoma  
Vice President Digital Product Mgt.  
Availability & E-Commerce Solutions, Voith

More than five years after the official launch, Papermaking 4.0 is catching on across the globe. In the traditional world of papermaking, Voith’s digital transformation is a rare success story. State-of-the-art digital solutions and best-in-class machinery are crucial for making progress, but technology alone does not shape the future. Meet the digital trailblazers co-creating tangible and sustainable results for leading papermakers.

And discover what’s →  
coming up next

OnCumulus  
OnCumulus.Suite  
OnPerformance.Lab  
OnCall.Video  
OnEfficiency.BreakProtect  
OnEfficiency.DIP  
OnEfficiency.Strength  
OnView.DigitalEye  
OnView.Energy  
OnView.MassBalance  
OnView.VirtualSensorBuilder  
OnQuality 4.0  
OnQuality.Actuators  
OnQuality.Controls  
OnQuality.Scanners  
OnQuality.Sensors  
OnQ FormingSens  
OnControl.Dewatering  
OnControl.FieldInstruments  
OnControl.Machine  
OnControl.Process  
OnCare  
OnCare.Asset  
OnCare.eDoc  
OnCare.Health  
OnCare.pmPortal  
UI/UX



Feb 15 2022

↓

Jürgen Käser  
Director Process Applications, Voith

OnCumulus

OnCumulus.Suite

OnPerformance.Lab

OnCall.Video

OnEfficiency.BreakProtect

OnEfficiency.DIP

OnEfficiency.Strength

OnView.DigitalEye

OnView.Energy

OnView.MassBalance

OnView.VirtualSensorBuilder

OnQuality 4.0

OnQuality.Actuators

OnQuality.Controls

OnQuality.Scanners

OnQuality.Sensors

Feb 17 2022

↑

Batima Mustafina  
Operational Product Manager Webshop, Voith

“Our digital wave in the paper industry was inspired by emerging and popular technologies and was already a work in progress long before the official launch of Papermaking 4.0,” explains **Michael Thoma**, Vice President Digital Product Mgt. Availability & E-Commerce Solutions at Voith. “Papermaking 4.0 is the culmination of our visionary idea to boost machine efficiency and availability using data, increased computing power and sensor technology,” Thoma continues. “A diverse team of engineers, specialists and domain experts turned this vision into a reality.”

Peter Eisen, Vice President Digital Product Management at Voith, agrees that the ideas have been bold and disruptive from the outset. Eisen sees his role as occupying the sweet spot between three key areas: Voith’s deep domain knowledge of the papermaking processes, the third industrial revolution – which primarily led to advances in computing, programing and automation – and the fourth industrial revolution – which is creating a world where physical, virtual and biological systems connect, cooperate and ultimately

change the way we live and work. This convergence of expertise, machinery and digital technologies ensures that Voith is the true solution provider. “We’ve always had a clear target to develop digital solutions that would increase machine availability and improve process efficiency and, as a result, bring tangible customer benefits,” Eisen adds. “That remains our priority today.”

Every innovation has therefore developed out of the domain knowledge and engineering expertise at Voith and has been further refined following input from real-world experience and leading papermakers. Along the way, relevant and proven technological advances in data mining and artificial intelligence have been incorporated into the individual solutions. “The overriding goal is to maximize resource-efficiency while minimizing the carbon footprint of the paper production line,” notes **Jürgen Käser**, Director Process Applications at Voith and a key figure in the R&D process for digital innovations since the early days. “In a nutshell, the focus is on lower costs, higher output and reaching target quality.”

Maria Knauer, Global Product Manager Efficiency Solutions at Voith, takes up the story with a concrete issue that every papermaker wants to see resolved: paper breaks. As her title suggests, Knauer is heavily involved in the development of the entire OnEfficiency product family that is specifically designed to boost efficiency in papermaking. One of the more recent additions is **OnEfficiency.BreakProtect**. With the help of artificial intelligence and Voith’s process knowledge, this digital tool identifies, understands and ultimately

helps prevent the causes of paper breaks. “Predicting breaks is an extremely complex and interwoven topic,” explains Knauer. “Until now, papermakers would identify break causes, such as lumps, and try to fight them. But most of the identified causes are actually only symptoms. With OnEfficiency.BreakProtect we can identify the underlying root causes and make it possible to sustainably reduce breaks.” Where OnEfficiency.BreakProtect has been implemented, it has already proven its worth. This solution leads to an increase in production usually by one of two ways – either by reducing the occurrence of breaks, which minimizes cost-intensive downtimes, or by continuously improving and stabilizing the papermaking process. Knauer adds: “A more stable machine means the production line can run faster and reach higher levels of production.”

In five years since the launch, there are now more than 300 successful Papermaking 4.0 installations. Voith provides over 25 market-proven digital solutions that bring a transparent and rapid return on investment, in many cases in under 12 months. This is hardly surprising given that creating customer value has always been the focal point of each new development. “Looking back, I would say we started with an explorative, agile approach and used every opportunity to collaborate closely with our long-term partners,” notes Eisen. “A lot of the concerns that papermakers voiced in the beginning are still valid today. Fortunately, as the frontrunners, we have used the time to build a working system with their issues in mind and co-created the Papermaking 4.0 portfolio of modular solutions.” One forward-thinking customer is Laakirchen Papier AG, a paper manufacturer based in Austria. Right now, the Laakirchen plant is being turned into a digital model site. By implementing a full suite of Papermaking 4.0 applications, the company will see significant cost reductions as well as a considerable sustainability boost in production. Dr. Thomas Welt, CEO at Laakirchen Papier, explains the reasons why Voith was the right partner for the task. “The diverse range of references convinced us, along with Voith’s decades of experience in sustainable papermaking and extensive R&D activities,” he

says. The PM 10 at the plant is equipped with numerous innovations out of the Papermaking 4.0 portfolio and is part of a pilot project with OnEfficiency.BreakProtect and OnView.Energy. Similar flagship ventures are also underway in Italy, where Voith continues to support the digital transformation of Fedrigoni, the country’s largest fine paper manufacturer, providing the necessary digital leverage to optimize all areas of the business. “The OnEfficiency solution implemented by Voith at Fedrigoni represents an important milestone in our digital transformation,” confirms Mario Naldini, COO BU Paper & Security at Fedrigoni. “With a payback period of less than one year, the financial benefits are significant.”

Thoma also underlines the importance of customer-centricity in developing digital solutions. “For each customer, the benefits of digitalization come from the smart combination of individual digital tools into customized modules,” he explains and points to Voith’s cloud-based hub OnCumulus as a critical enabler of digital transformation. As such, customers can take advantage of the platform’s storage processes and large-volume data processing to reduce their capital investment in IT infrastructure. **Batima Mustafina**, Operational Product Manager Webshop at Voith, highlights other factors that help digital platforms gain acceptance among the papermakers. “Availability of a machine is the crucial factor in the papermaking process. Voith **OnCare** family solutions connected with the **Voith Paper Webshop** help our customers to achieve the highest machine availability and pave the way to prescriptive maintenance,” she says. “Our one-stop-shop ensures a personalized and uncluttered ordering experience and makes it possible to have the required parts, products and services right at the start of the planned maintenance activities.”

In addition, the OnCare applications simplify lifecycle tracking, machine maintenance and management of all consumables and frequently exchanged products along the paper production line. The OnCare.Health application, for instance, is a critical component of the digital transformation, believes Thoma. “By analyzing the data feed from strategically placed sensors, this tool ensures real-time online condition monitoring and actionable insights that ultimately boosts machine availability.”

Most importantly, Papermaking 4.0 solutions are combined effectively with robust Voith machinery to help the paper industry address some of its biggest environmental challenges. Intelligent hardware and software combinations help balance the need for increased productivity and safe working environments with ambitious sustainability goals. One such smart solution is OnControl.Dewatering, which stabilizes the ply dryness by automatic control of the vacuum in the former. This leads to stable ply dryness and smooth paper machine performance, optimized ply bond (for multi-ply machines), lower energy cost and lower forming fabric wear due to reduced vacuum. This solution builds on the success of OnQ FormingSens, a sensor that provides greater transparency in establishing a defined and stable dry content after the wire section. Via a smooth ceramic surface, this sensor has direct contact with the forming wire and, thanks to its ergonomic design, can be adjusted easily from outside the machine with a higher degree of safety for the operator. It reliably enables the accurate measurement of water weight in the former using high-frequency, precise microwave technology. Interestingly, where the sensor has been implemented, it was frequently determined that vacuum pressure in single dewatering elements could be lowered and still increase and optimize the dryness before press, which resulted in substantial energy savings. For one customer in Central Europe, the reduction in energy consumption realized a ROI in under three months.

OnControl.Dewatering  
OnControl.FieldInstruments  
OnControl.Machine  
OnControl.Process  
OnCare  
OnCare.Asset  
OnCare.eDoc  
OnCare.Health  
OnCare.pmPortal  
UI/UX

Digital solutions backed by AI can certainly improve the working environment in the plants and help break down silos in papermaking operations, believes **Ulf Grohmann**, Director Product Management Automation. “Our papermaking vision of the future revolves around a simple and intuitive workspace that taps into AI to send out timely notifications. Relevant data is easy to view and interpret on our user-friendly dashboard, ensuring the control and monitoring of the complexities in papermaking is more efficient than ever,” he says. For this to succeed, the Voith Papermaking Vision foresees a **user interface and user experience** that supports process coordination within and across teams, particularly at critical moments, such as a shift change or grade change. Thanks to digitalization, each discipline across the papermaking process no longer needs to work in isolation, and traditional silos are losing ground to a more unified approach to papermaking. At the same time, smarter digital tools ensure that only the most relevant information is pushed to the people that need to see it at the right time. “The major issues in papermaking are not going away,” continues Grohmann. “We have a scarcity of resources, costly raw materials, increased demands on production capacity and sustainable papermaking, as well as a shortage of person-

nel. All these factors are putting unprecedented pressure on operators to perform their tasks with faster response times and with greater accuracy. Our vision takes care of these issues by defining and visualizing KPIs in one place and by aligning different views of the papermaking processes and commercial goals. This will lift the overall quality of the operation over time.” The first pilot is underway and already showing promising results. In the end, the benefits of digital transformation must be clearly visible immediately to the operators as well as to management and investors, as they are often the people with the highest expectations regarding intuitive, integrated and personalized solutions.

By tapping into the best of paper technology and human ingenuity, Voith is leading paper manufacturers into the future of intelligent automation. A deep understanding of the far-reaching implications of digital tools was palpable throughout the company from the start. “Such acceptance and support certainly helped establish trust in our digital approach both inside the company and with our customers,” says Eisen. “We have demonstrated over and over again that our Papermaking 4.0 portfolio provides first-class support. This is crucial for making the unavoidable culture shift involved in moving to digital operations.” The fact that Voith has a reputation for building on a 150-year history of innovation in papermaking helped set the scene for digital progress. But it hasn’t always been smooth sailing, as Jürgen Abraham, President Division Products and Services and Digital Business Officer at Voith, confirms. He is frank about the challenges. “Digital transformation is a rollercoaster of a ride,” he admits. “From my point of view, to move forward on the journey and gain acceptance across the papermaking community, you need to promote a growth mindset. You need to be open to explore new approaches and support others to adopt a similar stance, even in the most challenging of conditions. You also need to accept that nothing is set in stone, which brings us to the next level of papermaking efficiency and sustainability.” There is absolutely no danger of that at Voith. The recent merger with BTG, the renowned paper specialist, confirms Voith’s commitment to continuously upgrade, expand and fine-tune the Papermaking 4.0 portfolio. Eisen is understandably confident about the outlook. “We are not at the end of our mission to transform the paper industry,” he states. “In fact, we have only just scratched the surface of our ideas and opportunities.”

Ulf Grohmann  
Director Product Management Automation, Voith

34 Efficiency

nextlevel N°08

35 Efficiency

Efficiency 37



# OnQuality 4.0

OnQuality.Actuators  
OnQuality.Controls  
OnQuality.Scanners  
OnQuality.Sensors  
OnQ FormingSens  
OnControl.Dewatering  
OnControl.FieldInstruments  
OnControl.Machine  
OnControl.Process  
OnCare  
OnCare.Asset  
OnCare.eDoc  
OnCare.Health  
OnCare.pmPortal

“Our unrivaled OnQuality measurement technology and structured, intuitive and personalized dashboards provide clear, actionable insights.”

Marc Stampfer  
Global Product Manager,  
QCS Scanners & Sensors, Voith



Visionary concept of the OnQuality.Scanners: intuitive, state-of-the-art visualization panels for a safer, simplified paper quality measurement of the future.

Tapping into cloud-based applications, virtual sensors and control-optimizing remote support, OnQuality 4.0 is set to make waves in quality control and automation and help lay the foundations for the digitalization of your mill.

“Three pillars are driving digitalization in quality control and form the foundation of the future of **OnQuality 4.0**,” highlights **Marc Stampfer**, Global Product Manager, QCS Scanners & Sensors at Voith. The first is a secure and powerful cloud, which is provided by OnCumulus, the IIoT platform designed by Voith engineers. The second is the OnView.VirtualSensors, which uses artificial intelligence to predict non-online measurable quality parameters to take the physical sensor portfolio to the next level. And the third is OnPerformance.Lab, the remote service center that taps into Voith's full-line supplier competence and provides tailored services, including optimizing MC and CD controls as well as grade change processes.

Crucially, the three pillars build on the successful track record of OnQuality.Scanners and OnQuality.Sensors, the portfolio of scanning equipment and sensors developed by Voith with over 750 running installations. Thanks to the compact design and the thinnest and most modular sensor portfolio in the market, these scanners are flexibly installed in existing and new production lines and scan for a broad range of parameters. Each accommodates up to 12 physical sensor slots. Now, the OnQuality.Scanners hardware is undergoing a Papermaking 4.0 upgrade, in the form of OnQuality 4.0. “Our unrivaled OnQuality measurement technology and structured, intuitive and personalized OnCumulus dashboards provide clear, actionable insights and deep analytics,” says Stampfer, who is convinced OnQuality 4.0 allows an easier interpretation of data. “In addition, with our virtual sensors, we help our customers to overcome the boundaries of physical sensorics,” he notes. “OnQuality 4.0 is a best-in-class solution accessible from all devices that all papermakers will welcome.”

Importantly, hardware components benefit from digitalization, too. As part of the Papermaking Vision, a design study by Voith for the papermaking of the future, the topic of digitalization and automation is also considered. This has resulted in a visionary concept for the future OnQuality.Scanners, adds Stampfer. “With intuitive, state-of-the-art operation and visualization panels directly on the scanner, an intelligent light and alarm system and attractive and easy-to-service mechanical and electrical design, we will make life easier for operators and maintenance crew.”

## With every Fiber

If your consistency control loops lack control, BTG's FiberMAX solution offers a novel way to increase efficiency, minimize variability and reduce costs.

In any papermaking process, the control loops for fiber mass flow are crucial for stable production. FiberMAX, a service offered by Voith subsidiary, BTG, helps identify hidden issues in these loops. As the most important raw material in papermaking, fiber needs to be delivered to the headbox with as little variability as possible or risk resulting in expensive overdosing of fiber, additives and energy – and, eventually, high costs.

Achieving the correct result involves a careful survey of each dilution control position. “The trick,” says Michael von Grumbkow, BTG Papermaking Expert, “is to compensate for the incoming variability and shift it to systems where it doesn't hurt the production. And, in this way, ensure that the furnish reaches the headbox as steadily as possible at the targeted value.” No issues – better productivity.

As part of the service, BTG experts visit customers on site to evaluate all consistency control loops and collect relevant data. A subsequent report identifies weak points and optimization recommendations. In each case, BTG specialists outline the steps to get control loops back on track. And they have a proven track record – BTG has evaluated more than 50 production lines across a range of manufacturers. Since FiberMAX is a flexible diagnostic tool, it can be applied to any type of paper production line.

Most recently, von Grumbkow found himself in the production halls of a company whose paper machines produce more than 1,000 tons per day. Despite the paper mill being well run, he found 15 serious issues out of a total 105 aspects analyzed. “That's a pretty low rate,” he says. Which is good, but it still offered ways to reduce production costs. After all, BTG specialists are optimization experts with every fiber of their being.

### Benchmarking

Results and suggested measures are documented in a FiberMAX report

### Expert review

Entire production line is assessed to identify areas requiring attention

### Hardware check

Critical consistency sensor and sampler data is collected and analyzed



# Stand out



**Benno Morlock**  
President, Division Fabric & Roll Systems, Voith



How has Voith taken the lead as the full-line supplier for wear parts? As this interview with Benno Morlock makes clear, there is no single answer. The President of Fabric & Roll Systems at Voith attributes the ongoing success to a combination of factors, including a strong, innovative and international team; an unrivaled global footprint; and a best-in-class portfolio.

**That's a great backdrop, Mr. Morlock. Could you tell us why you chose it?**

This is our flagship product and the market leader in press sleeves. It's a tailor-made QualiFlex press sleeve fresh off our production line in Heidenheim, Germany. I see it as a symbol for our unmatched competence and technology, as well as for our ongoing innovative approach at Voith Paper. Personally, I am most proud of the work that has gone into the products in the QualiFlex family. What we offer are solutions that stand out for value creation and performance.

**The Voith approach to fabrics and roll sleeves generally stands out from the crowd. Why is that?**

First, we are a global operation with an unrivaled local presence. For Voith in general customer proximity is important, but for the rolls business and services it is critical. When each roll weighs between 10 and 120 metric tonnes, it's clear they cannot be shipped easily across long distances. Our customers need us to be close to them. Our footprint of 39 plants and workshops that stretches around the globe ensures we are. As a result, we are familiar with the local perspective and market requirements. Such a localized approach leads to a level of service that would otherwise be impossible.

Secondly, we customize complete solutions for each specific use. Unlike spare parts, which are generally concerned with the one-to-one replacement of components, consumables are about defining solutions that will improve plant productivity by boosting machine performance, for instance, or by reducing unscheduled shutdowns. Since the renowned paper specialists Toscotec and BTG joined the Voith family, we are in an even stronger position to provide tailor-made solutions for every paper grade. One area where we see considerable opportunities is in tissue production. Having the additional expertise of Toscotec and BTG on board, on top of our own Voith full-line supplier know-how, greatly complements our wear parts offerings. ———>



# Stand



“Having everything under one roof means we understand the interdependencies of all the individual components.”



**Benno Morlock**  
President, Division Fabric & Roll Systems, Voith

#### Who is Benno Morlock?

After joining the Voith Group in 2008, Benno Morlock spent 10 years at Voith Turbo, becoming a member of the Management Board of the Voith Turbo Group Division in April 2013.

In 2018, he became a member of the Management Board of Voith Paper.

Since May 1, 2018, he has headed up the innovative team in the Division Fabric & Roll Systems.

#### How does the customer benefit?

Having everything under one roof means we understand the interdependencies of all the individual components. We are better able to appreciate the customer pain points and address them with an even broader scope of solutions. We can therefore optimize our products and maximize the lifetime of our fabrics, which ultimately increases the uptime of the paper machine. Most importantly, having a full-line supplier as a partner reduces the sources of complexity for our customers. Given that many companies are experiencing a shortfall in skilled personnel, our customers increasingly value such expertise. This is particularly true in Europe and North America, where the labor situation is most acute. Our network of Voith experts across the globe offers an unrivaled level of support for our customers in terms of troubleshooting, service and training of personnel.

#### And from Papermaking 4.0?

Our experience has shown that centralized asset management is invaluable for optimizing maintenance, which is why we developed OnCare.pmPortal. Crucially, this platform offers a very accessible visual display of your own paper machine and allows for comprehensive and convenient tracking and management of individual products. Tagging enables easier identification, uploading of data and lifecycle tracking, which are all instrumental in the timely scheduling of maintenance. This software builds an important knowledge base for the plants. In addition, our digital tool for video remote support, OnCall.Video, really proved its worth during the pandemic. By tapping into the strengths of smart data glasses and common mobile devices, we now provide real-time data analysis and support through high-quality audiovisual live streaming. This was particularly relevant when local social-distancing requirements prevented us from entering plants. OnCall.Video allows us to walk anyone through the optimum maintenance procedures and get the paper machine back up running again as efficiently as possible.

#### How does it look with real-time condition monitoring?

In the past, you could only monitor the condition of forming fabrics during shut-downs, which cuts into productivity. Today's sensor technology allows us to implement real-time condition monitoring while the paper machine remains in operation. With Voith's OnQ FormingSens sensor, for example, our customers can adjust the settings as required, depending on the real-time data feed, and avoid a disruption to production. Such a real-time approach ensures fabrics get to perform to their full life potential and maintenance is performed only at the optimum moment.

#### On the machine side, Voith is leading with resource-efficient machinery and technologies. And in the area of wear parts?

Our motto is value creation through innovation. Today, our customers value both sustainability and efficiency in production. That's why our international team of experts is working on innovations that will further improve optimal dewatering performance using less energy. Take for instance HydroSeal, our modern alternative to conventional sealing strips for suction rolls. Real-world experience shows this innovation consistently reduces water consumption for lubrication by up to 70 percent and specific energy consumption by 10 percent. This provides value creation from both a financial and a sustainability perspective. We have also made a promising start in our research on bio-based materials. Finally, I see enormous potential for additional innovations across our entire portfolio of fabric and roll solutions. Our advanced technology will further increase the positive impact on machine availability, efficiency and profitability. I have no doubt that our solutions will play a crucial part in the future of sustainable papermaking.

# The shape of things to come



The unique yarn shape of MultiForm IC<sup>2</sup> improves runability, performance and fabric life potential.

“We’re always happy to put our innovations under the microscope,” says Tom Meijer, Global Product Manager Forming Section at Voith. In the case of MultiForm IC<sup>2</sup>, a new forming fabric designed for board and packaging, a microscopic close-up reveals an innovative use of materials, weave concepts and complex designs. The paper side is more fibrillation resistant, highly dirt repellant and has higher surface open areas for better drainage capacity. While on the wear side, the structured yarns ensure the highest dimensional stability, and the shape is optimized to reduce energy consumption. “Our developments in the field of forming fabric are highly respected in the industry. Extensive trials confirm the uniquely shaped square bottom yarn warp on our latest innovation has a record life potential,” adds Meijer. “And the potential to shape the future of forming fabrics.”

Take a closer look at this shape-shifting innovation!





When Longchen Paper investigated how to improve the efficiency of the dryer section at its mill in Taiwan, the answer was clear: CleanWeave.

A challenge many paper mills face is that standard fabric cleaning systems move some contaminants to the underside of the dryer fabric, rather than removing them. If not addressed, this negatively affects machine efficiency and paper quality.

However, as Wei Chen, Production Manager of Longchen Paper in Erlin, Taiwan, discovered, Voith's CleanWeave offers a solution. Chen launched an investigation focused on the first dryer group of the PM 3B production line using a fabric approaching the end of its lifespan. To gauge the effectiveness of the process, he applied cleaning to just two-thirds of the fabric's width.

**“CleanWeave is much easier to clean than fabrics from other suppliers. We experienced fewer edge cracks on low basis weight paper, reduced sheet breaks and better runnability.”**

**Wei Chen**  
Production Manager of Longchen Paper, Erlin, Taiwan

The outcome was revealing; while the paper-side of the fabric was cleaner in the treated area, the underside of the uncleaned area showed less contamination, and both areas had a similar fabric permeability. In other words, the cleaning had removed contamination from the paperside but moved particles to the underside, where they could easily be transferred to other key elements in the dryer section, such as vacuum stabilizer rolls.

In response, Chen looked to CleanWeave for its innovative low internal trapped volume design, which allows more of the fabric structure to be directly cleaned by the water jets. Since the design has roughly 70 percent fewer crossover points than a conventional woven dryer fabric, its flex point apertures maintain open airflow channels, reducing contamination transfer and improving production efficiency. “CleanWeave is much easier to clean than fabrics from other suppliers,” Chen says. “We experienced fewer edge cracks on low basis weight paper, reduced sheet breaks and better runnability.”

“We’re thrilled with the results of the study undertaken by Wei Chen,” says Aldan Chua, Product Manager Drying APAC at Voith. He adds that combining CleanWeave with Voith’s state-of-the-art CleanLine Extract4D system could provide even more potential for fabric cleaning and machine optimization.

**CleanWeave at Longchen Paper**

**353** days record life  
**+ 75%** permeability retention  
**= 58%** better purchasing value

# CurvedBar

## CurvedBar screen plate – straightforward advantages



Joan Irastorza, Production Manager, and Félix Escauriaza, Technical Manager, at RDM Paprinsa

With benefits at every turn, Voith's CurvedBar screen plate sets a new standard for longevity, quality and efficiency.

During recovered paper pulping, the screen plate is subjected to significant mechanical stress. To minimize this, Voith developed the CurvedBar screen plate. With an innovative design that matches the shape of the screen plate to the rotor, it reduces the risk of bar breakage and screen plate deformation while extending lifetime.

After having installed CurvedBar, Spain's second-largest recycled carton board manufacturer, RDM Paprinsa S.A.U., expects to achieve a 100 percent longer lifetime to the tune of 2,500 hours. The manufacturer also noted less spinnings in the pulper and a longer lifetime of other wear parts, leading to a 12 percent reduction in time spent on mechanical interventions. “We’ve discovered better behavior of the pulper, as well as better screening efficiency,” shares Joan Irastorza, Production Manager at RDM Paprinsa.

“We are very pleased with these results,” says Oliver Lüdtke, Global Service and Product Manager at Voith, attributing the outcome to the design. “Thanks to lower shearing forces on the screen plate, far fewer contaminants are shredded. Therefore, the quality of the fiber suspension is improved, while the amount of small rejects is reduced,” he explains. Fewer stoppages make the overall process more efficient, while carrying benefits for operating and maintenance costs – and the environment. “It’s possible for customers to leverage cost savings potential and reduce their carbon footprint,” he notes.

Since launching in October 2020, CurvedBar has proven itself all over the world. To further expand this success, a scale-up project is currently being carried out to determine which machines from other manufacturers can be equipped with the screen plate.

**12%**

reduction in time spent on mechanical interventions.



**OnCare.pmPortal:**  
Track lifetime and inventory  
of consumables for  
maximum transparency.

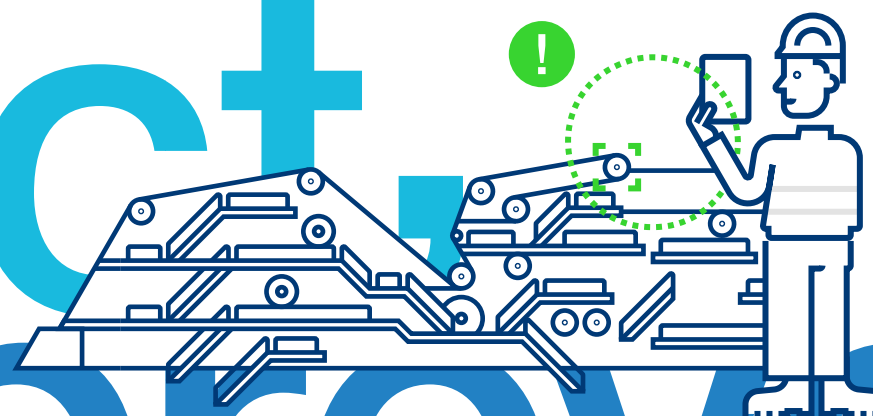
Sophisticated digital tools from the OnCare portfolio maximize machine availability, while an integrated e-commerce solution minimizes the administrative burden.

"When you start up with OnCare.Health, we maximize machine availability," says Tomas Jutbo, Global Sales Manager at Voith. For Grupo Gondi, one of Mexico's largest paper manufacturers, an early start with real-time condition monitoring at the new Papel y Empaques mill in Monterrey is already paying off. Since day one of operation in early 2021, strategically placed sensors along the XcelLine PM 7 have been feeding relevant data into the **OnCare.Health** application. Here, Voith's domain know-how and state-of-the-art data analytics combine to detect anomalies in machine condition that impact performance. Once an anomaly triggers a warning, the reliability engineer – or OnCare.Health directly – notifies the maintenance team via **OnCare.Asset**. This tool analyzes the data and recommends how to optimize maintenance, component by component. Crucially, the recommendations are based on historical patterns and KPIs defined during a comprehensive Voith audit of the plant and its modes of operation. As Francisco Javier Lozano Hernandez, Maintenance Planning Manager at Grupo Gondi explains, such in-depth knowledge of the inner workings of the plant is incredibly important. "The support provided by the Voith team has been first class," he says. "Since the start-up, all maintenance processes and relevant data have been available to us. As a result, we have been able to carry out the necessary maintenance from the outset." What's

**OnCare.eDoc:**  
Access your machine manuals and  
related documents from any location  
to lower the administrative burden.



**OnCare.Health:**  
Use real-time online condition monitoring for early anomaly detection.



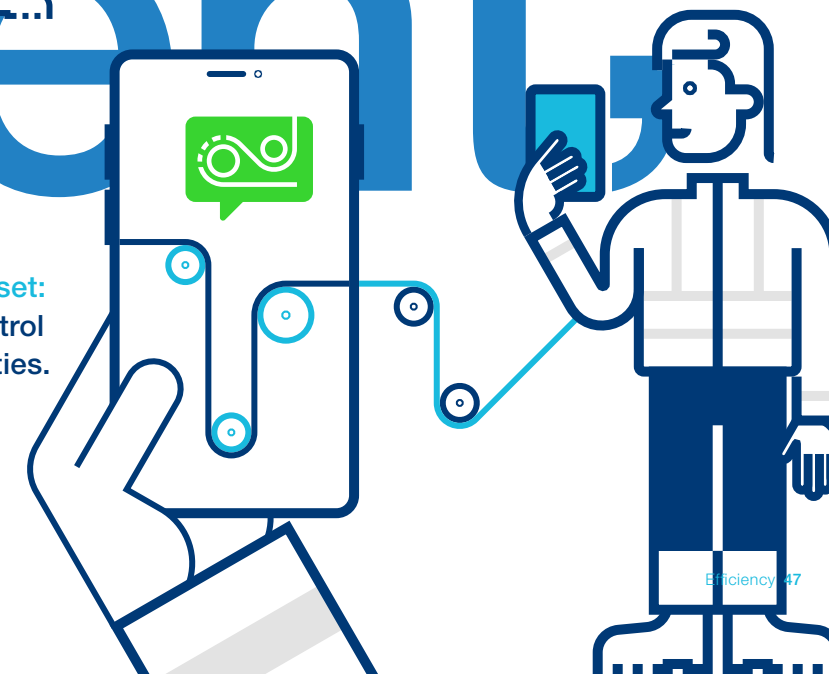
"We can react fast and  
be proactive."

Victor Alcantar Lara  
Corporate Manager Projects &  
Maintenance at Grupo Gondi

**Voith Paper Webshop:**  
Get instant access to our parts  
and service portfolio to  
simplify your procurement process.



**OnCare.Asset:**  
Coordinate, execute and control  
all your maintenance activities.



# Predictive preventive perform.



## At your ProServices

Four core and four supporting services can be tailored to specific customer requirements.

## Core services:

**ProPress:**  
Press roll load check to pinpoint efficiency and safety issues

**ProDry:**  
Paper/Yankee infra-red analysis to identify inconsistencies of the condensate removal system and other issues

**ProSurface:**  
Yankee shape topography to detect worn surface areas

**ProFile:**  
Blade holder profiling to improve efficiency and protect the Yankee surface

## Supporting services:

**ProHead:**  
Yankee head tilt to TAPPI standards, required every two years

**ProInspect:**  
Detailed Yankee inspection using an extensive checklist

**ProSteam:**  
Analysis of steam, condensate and related parameters

**ProRun:**  
Determination if surface intervention is needed, e.g., grinding or re-metallization

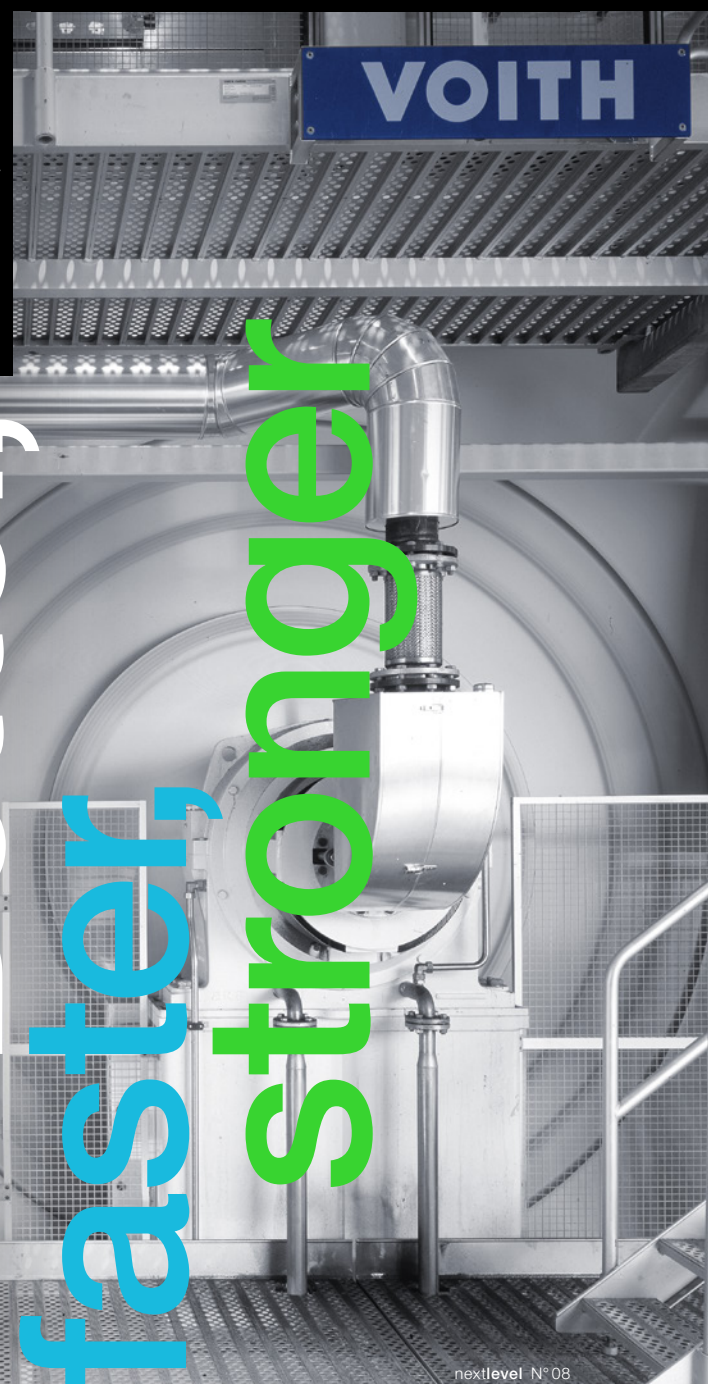
The idea was simple – leverage the expertise and services of Voith, BTG and Toscotec to offer customers a modular Yankee service portfolio unlike any other on the market. The execution was even better.

“In ProServices we found a way to combine our expertise to offer a unique breadth and depth of knowledge,” notes Daniel Schoeps da Silva, Global Product Manager Tissue at Voith. “As a full-line supplier of machinery and consumables, we can cover the entire tissue manufacturing process with an exceptional range of tools and skills currently not available on the market in this bundled form.”

By joining forces, Voith, BTG and Toscotec boast dedicated R&D, application and operations teams, while providing customers with a single point of contact and transcending standard maintenance with a broad range of flexible troubleshooting and optimization Yankee services. “For example, within ProServices we can combine ProSurface, which measures the shape of the Yankee during production, with ProDry, which measures the temperature of the paper coming out, to arrive at a better understanding of potential process vulnerabilities,” explains Ian Padley, Global Solutions Team Manager Tissue at BTG.

Furthermore, ProServices allows customers to select services based on their requirements. “Our customers can decide how to address efficiency, performance, energy consumption, runnability or any other area they see as critical to the operation of their Yankees,” he notes. Moreover, customers also benefit from greater service proximity, with on-site specialists available across a broad spread of locations.

“Whether steel or cast iron, the Yankee is used by all tissue manufacturers and runs 24 hours a day, seven days a week, the whole year through,” Schoeps da Silva concludes. “That’s why it’s so important to ensure it’s always in top condition. With ProServices we have a way of doing that, while supporting our customers’ specific needs.”



**Better,  
faster,  
stronger**

Efficiency, proximity and a broad portfolio of modular Yankee solutions – when Voith joined forces with its market-leading subsidiaries, BTG and Toscotec, a new era of ProServices was born.

## Process services

### Audits

- Production line
- Maintenance
- Digitalization
- Energy
- Safety
- IT-Security

### Expert support and consulting

- Smart monitoring
- Data analytics
- Condition monitoring
- Technology
- Maintenance
- Engineering
- Automation

### Training

- Equipment
- Operation and technology
- Safety
- Methodology

### Measuring and diagnostics

- 3D scan
- Alignment service
- M&D MobiLab – Mobile Laboratory
- Paper moisture profile analysis
- Paper profile analysis (Tapio)
- Press load measurement
- SpeedUp certificate
- Vibration analysis
- Wet end process analysis

### Remote tools

- Telephone support
- VPN support
- Video support
- Cloud service

Conducting a successful audit is a balancing act. The aim: to achieve maximum process efficiency while maintaining high production speeds and top product quality. To deliver the best results, audits need to cover a range of activities. To be successful, they require experts like Hendrik Sachs, Service Director Process Technology at Voith, and his team. “We work closely with our customers worldwide,” he says. “We have the domain knowledge, understand technical challenges and, based on our experience and use of digital tools, offer suitable solutions.”

Before an audit takes place, the Voith team gathers information and reviews machine drawings and system documentation. Next, they spend considerable time in discussions and observations with the customer. “Knowledge from external experts brings new ideas to paper mill optimization. Customers are often aware of existing issues but might not know exactly where to start. An audit helps to identify irregularities, problems and optimization potential,” Sachs explains.

Collected data is then interpreted and aligned against the observations – including using advanced AI technology – to get a clear picture. “Our experts place the uncovered potential into a matrix, including priority and effort,” Sachs continues. “This helps customers to easily decide where to begin – change settings or routines, improve or repair equipment, use new technologies and so on.”

If necessary, laboratory analyses of stock and paper samples are then carried out. Here, Voith’s mobile laboratory, M&D MobiLab, offers a flexible and efficient option.

Finally, the team draws up a list of recommendations. The spectrum ranges from process and operational optimization measures to maintenance and upgrade suggestions. As a full-line supplier for all paper grades, Voith possesses the complete range of equipment – and the in-depth knowledge to match – to deliver on all aspects of a high-quality audit. Helping customers achieve greater efficiency, without compromising production or quality, is one way Voith builds service partnerships geared to success.

## Equipment services

### Installation and commissioning

- Installation service
- Commissioning service

### Maintenance

- Inspection
- Preventive maintenance
- Corrective maintenance
- Equipment improvement
- Repair and refurbishment

### Materials

- Spare parts
- Wear parts and consumables

How to maximize efficiency while maintaining appropriate control? A process audit can provide the answer – and the perfect foundation for sustainable production operations.

**Checks  
Balances**



Long-lasting, profitable and innovative partnerships are the holy grail of the modern world. But how are they best achieved? Dr. Andrew Humphries, Chief Executive Officer of SCCI, an organization that helps companies to improve business partnerships, and co-author of new book, *Implementing and Managing Collaborative Relationships*, offers his insights.



In partnership we trust

"Trust is nurtured by understanding and carefully managing interconnected business processes, based on each party's willingness to demonstrate concern about everyone's individual and joint success."

Dr. Andrew Humphries,  
CEO SCCI

Dr. Andrew Humphries

# 1. As somebody who has spent his career understanding business relationships and collaboration, how do you define "successful" partnerships?

Successful partnerships are those that manage to establish a "virtuous cycle." That is, those which begin with specific aims based on the known capabilities of both sides and uncover further abilities as they continue. As a result, they realize more open and in-depth communication, stimulate creativity and innovation, and broaden the focus of each partner. When this is accomplished, intangible aspirations become achievable which, in turn, provides impetus for joint investment, enabling partners to take advantage of unexpected opportunities. The benefits encourage innovation, generating more value, which can then be reinvested.

In such relationships, trust is nurtured by understanding and carefully managing the interconnected business processes. And this is based on each party's willingness to demonstrate concern about everyone's individual and joint success.

## Vital partnership characteristics and behaviors

- Long-term orientation – encourages stability, continuity, predictability and long-term joint gains
- Interdependence/forbearance – compensates a loss of autonomy through expected gains
- Joint resourcing – C3 behavior (Collaborating, Co-operating, Co-ordinating) achieves effective operations
- Adaptivity – helps mold products, procedures, inventories, management, attitudes, values and goals to the needs of the partnership
- Personal interaction – fosters trust and openness through personal relationships

# 2. Do you have any tips for good virtual collaborative engagement?

Whether the interaction is virtual or otherwise, the principles of collaborative working will always apply. A key component is investment in a relationship manager – appointed by each partner organization, with both strategic and operational oversight – to be responsible for relationship management of their organizations' joint enterprises.

# 3. Reflecting on your years of research into effective partnerships, is there anything that is broadly underestimated?

Despite many case studies that conclusively prove the converse, doubt persists over whether collaboration is worth hard cash. However, collaboration drives traditional benefits, such as increased profits, greater market share and the fulfilment of project objectives. Further, it also improves intangible factors such as innovation, knowledge and skills capture, enhanced reputation, and brand value.

Another important point is that objective performance measurement is essential for the effective management of collaborative relationships, yet it is rarely applied to all parties simultaneously.

## If done well, it can:

- Provide an objective, non-partisan measure of relationship effectiveness and teamwork
- Highlight counter-productive activities and describe actions to turn them round
- Highlight positive activities and describe actions to enhance and spread good practice
- Create a common foundation for change
- Promote innovation and continuous improvement
- Support proactive governance





VOITH

# Discover what's next

Based on decades of experience,  
we are committed to the  
most sustainable paper production.



# PAPERMAKING FOR LIFE

# We love paper.

That's why we develop  
innovations that enable sustainable  
paper production.

Driving innovation for  
sustainable papermaking

- Zero effluent with AquaLine water management concept
- Best-in-class performance: up to 20 % savings in energy, fiber and water through more efficient products and digital solutions
- Strong focus on sustainability and efficiency in all R&D projects
- Pacemaker in several industrial initiatives

Optimization of our  
own activities

- 100 % CO<sub>2</sub> neutral:  
all activities at Voith locations worldwide  
are climate-neutral



## Already now



## By 2030

- Enabling 100% CO<sub>2</sub> neutral paper production through the use of energy-optimized products, digital solutions and renewable energies
- Disruptive technologies for a wholly new papermaking process with 90% fresh water savings
- New recycled fiber streams for 90% recycling rate
- Expansion of photovoltaics, increase in energy efficiency and share of renewable energies as well as gradual reduction of compensation measures