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This issue of PaperAge marks its 135th anniversary since Charles Carroll Walden published the first issue of what was then titled “United States Paper Maker” in June of 1884. The 16-page issue, which featured a picture of Kenwood Felts and Jackets – F.G. Huyck & Sons’ factory in Albany, New York, carried the slogan, “Devoted to the Interest of the Paper & Pulp Industry.”

Back in the late 1800s, a yearly subscription to United States Paper Maker was $2.00 and sample copies were available for 20 cents. To my knowledge, the first issue was printed in Holyoke, a town in western Massachusetts located in a region that was referred to as Paper City due to an abundance of printers and paper mills in the area. In 1885, Holyoke was the largest single producer of paper of any city in the United States, producing around 190 tons per day, more than double the next-largest producer, Philadelphia, producing 69 tons per day despite having a population nearly 40 times its size.

I’m not sure when the Walden family changed the name of United States Paper Maker to PaperAge. Ken Johnson bought the publication from Charles C. Walden III in September of 1971, and the PaperAge title had been around for a while prior to that.

Ken had served as a sales manager for Pulp & Paper and Pulp & Paper International for 18 years and knew the paper industry extremely well. During those years he had also developed a friendship with my dad, Jack, who also worked for Miller Freeman, Inc., the publisher of Pulp & Paper.


Ken died on Dec. 21, 1986 after a brief and sudden illness. He was only 58 years old. Ken was a good guy with a warm personality. It was at that time that Jack took over the publishing reins of PaperAge.

Jack will be 92 this December. He spent nearly his entire adult life immersed in the pulp and paper industry. Even before his involvement and eventual ownership of PaperAge and the decade spent with Miller Freeman, he worked for his father J. J. O’Brien, who served as editor and eventually publisher of Paper Mill News and Post’s Directory during the 1950s.

Jack is now ‘fully’ retired and still loves the industry. He’s been to pulp and paper mills around the world, visited the industry’s suppliers in North America and Europe, and attended countless trade shows and conventions. It’s been an enormous part of his life.

Today, my brother Michael and I are the keepers of PaperAge. It sounds corny, but when I think about PaperAge, with its roots dating back to 1884 and the thousands and thousands of issues that have been published since that time, it’s kind of humbling.

Going forward, we’ll do our best to remain ‘devoted to the interest of the paper & pulp industry.’
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Phoenix Paper LLC plans to invest $200 million to build a paper recycling facility on the grounds of the Wickliffe pulp and paper mill it purchased from Verso in September of 2018. According to Kentucky Governor Matt Bevin’s office, Phoenix Paper plans to use the existing site to build a recycled paper and pulp facility. With an estimated 700,000 ton per year capacity, the new facility will receive post-consumer cardboard and mixed paper from various regional locations, which will then be processed into recycled pulp. Current design and equipment specifications are being finalized with construction to begin before the end of the year.

WestRock announced that it is reconfiguring its North Charleston, South Carolina paper mill to improve the mill’s operating efficiency and long-term competitiveness. As part of the reconfiguration, WestRock will permanently shut down one of the mill’s three paper machines and related physical infrastructure, eliminating approximately 288,000 tons of linerboard capacity. The reconfigured mill’s production capacity will total approximately 605,000 tons per year, consisting of three grades: kraft linerboard; KraftPak, an unbleached folding carton kraft paper; and DuraSorb, a saturating kraft paper used for decorative laminate and industrial end uses.

“WestRock is enhancing the mill’s capability to produce higher value products by moving more than half of the mill’s production on the high-value, differentiated DuraSorb and KraftPak products,” said Steve Voorhees, CEO of WestRock. “Reducing the production of linerboard at this mill will help balance our supply with customer demand across our system.” The company anticipates that the reconfiguration will increase WestRock’s annual EBITDA by approximately $40 million, primarily due to the reduction in operating costs from the shutdown of the paper machine and its associated infrastructure. This reconfiguration includes an anticipated workforce reduction of approximately 260 positions at this mill over a five-month period, starting in January 2020.

“We understand that this reconfiguration will impact our employees, their families and the community,” continued Voorhees. “Our teams are working to provide support and resources to our employees and their families as we move forward.”

The North Charleston mill became an asset of WestRock through WestRock’s acquisition of Kapstone Paper and Packaging — a deal that closed in November of 2018.
An outstanding paper product requires outstanding production – matched with the particular needs of raw material and final product. Discover the full-range portfolio from ANDRITZ! Excellent stock preparation that allows best fiber development according to furnish and with economical use of resources. PrimeLine paper machines that are a synonym for producing top-quality tissue, paper, and board grades. Complete lines or single units, upgrades, modernizations, and lifetime service – ANDRITZ is ready for your challenge! Contact us and benefit from your individual package in papermaking technology.
Graphic Packaging announced that its Board of Directors has approved a $600 million investment in a new coated recycled board (CRB) machine in the Midwest with annual capacity of approximately 500,000 tons.

The company is planning to make the investment in either Ohio or Michigan, subject to a number of conditions, including environmental permitting and negotiations currently underway relative to government incentives and labor relations.

Graphic Packaging expects the investment will be capacity neutral by eliminating higher cost production at other facilities and will deliver an incremental $100 million in annualized EBITDA upon full ramp up in 2022. The increase in EBITDA will be driven by cost savings from significantly increased scale production, reduced raw material consumption, and lower fixed costs.

“We are very pleased to announce our intent to proceed with this significant investment into our integrated CRB platform. This is a unique opportunity to make a highly strategic investment in sustainable packaging, exceptional product quality and an unmatched cost position for producing CRB,” said President and CEO Michael Doss.

“Importantly, the investment will be capacity neutral as we expect to reduce production at other higher cost CRB facilities after we ramp up production of this highly productive CRB machine starting in early 2022.

“Increasing consumer preference for sustainable packaging is expected to drive steady, long-term demand for packaging solutions manufactured from 100% recycled fiber. We are confident the investment will deliver returns well above our cost of capital, and remain fully committed to executing our balanced approach to capital allocation as we continue to build a growing, highly integrated, low cost paperboard packaging platform,” Doss concluded.

Cascades in September completed its acquisition of Orchids Paper Products assets for a cash consideration of US$207 million. The assets include the Barnwell, South Carolina and Pryor, Oklahoma operations, as well as certain other assets, including amended supply and other commercial arrangements with Fabrica de Papel San Francisco, S.A. de C.V. (“Fabrica”), based in Mexicali, Mexico, and certain of its affiliates.

Cascades President and CEO, Mario Plourde, commented, “I am very pleased to welcome Pryor and Barnwell employees to the Cascades family. Without a doubt, this acquisition will accelerate the modernization of Cascades’ U.S. tissue platform while strengthening the geographic and operational positioning of the Company’s retail tissue segment. This transaction creates value for both our clients and for our shareholders with an expected annual EBITDA contribution of approximately US$45 million beginning in 2021.”

Cascades noted that over the past five years, more than $240 million has been invested in the plants’ modern production and converting equipment and in establishing a strategic partnership with Fabrica.

Orchids Paper’s integrated plants have an estimated parent roll capacity of up to 114,000 tons and up to an estimated 114,500 tons of converting capacity. The agreement with Fabrica provides access for up to an additional 20,000 tons of converted products for the Western U.S. market.

McKinley Paper Mill in Port Angeles Prepares to Re-open by Year End

According to a story in the Peninsula Daily News, workers are dismantling long-dormant equipment at the McKinley Paper Co. mill to make way for $6.1 million in improvements as the company looks toward reopening the plant by Dec. 31.

The mill was shuttered in April 2017 by Nippon Paper Industries USA, putting 150 employees out of work.

McKinley will hire about 100 workers and is collecting applications, General Manager Edward Bortz said at the end of August.

Bortz said the new equipment includes a pulper for processing recycled cardboard into heavyweight bag grades of paper and corrugated fluting for box liners.

“Everything is proceeding. We’ve got our permit from the city, we’ve got our environmental permits, we are getting construction going and getting the hiring going, and everything is coming together,” Bortz said.

The city of Port Angeles has approved an industrial-remodel building permit for the project in mid-August so a kraft pulper and related pulp processing equipment can be installed.
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NORTH AMERICA

Long Falls Paperboard to Study Use of Biomass Co-Generation Plant

Long Falls Paperboard, the company that acquired the former Neenah Paper mill in Brattleboro, Vermont, is using a $1 million federal grant to study using wood biomass instead of the natural gas that is delivered to the mill in trucks every day.

Brattleboro Development Credit Corp. (BDCC), which owns the mill and leases it to Long Falls Paperboard (LFP), will use the $1 million grant from the Northern Border Regional Commission to study the feasibility of building a biomass co-generation plant over the next 18 months, said Adam Grinold, executive director of the nonprofit economic development organization.

BDCC has worked very closely with LFP since before the Washington-based company purchased the business and equipment in January. BDCC worked with LFP to obtain loans from the Vermont Economic Development Authority and People’s United Bank; secured training and other grants from the state; and worked with a variety of other local entities to help LFP lease the property and keep the business running.

For the biomass plant project, LFP will probably need to borrow between $14 million and $22 million, Grinold said.

“They knew they needed to address their utility costs coming into this deal,” said Grinold. “They are one of the few firms in southern Vermont that truck in natural gas.”

According to a local newspaper story, LFP is considering a 5-megawatt plant.

Sappi to Acquire Matane High Yield Pulp Mill from Rayonier Advanced Materials

Sappi Limited in August announced an agreement to acquire the Matane (Quebec) high yield hardwood pulp mill from Rayonier Advanced Materials for US$175 million.

The mill is located on the south shore of the St. Lawrence River at the mouth of the Matane River. The mill has a capacity of 270,000 tons per year of high yield hardwood pulp. It has 129 employees.

Sappi noted that the acquisition establishes certainty of supply for the company’s increasing need for high yield pulp to support its recent investments, and will enable supply to be increased over time to Sappi’s mills in North America and Europe as demand increases and capacity expands in certain growth businesses.

“We are very pleased to be able to increase our pulp integration for our North American businesses,” said Mark Gardner, President and CEO of Sappi North America. “The acquisition eliminates the need to invest in a pulp expansion project at the Somerset Mill, which for the same investment would have delivered significantly less pulp. At the same time, this acquisition provides us with a healthy market pulp business with a strong customer base.”

Editor’s note: Mark Gardner retired on Oct. 1. He is succeeded by Mike Haus.

SOUTH AMERICA

K-C to Invest $42 Million in Its Production and Supply Center in Costa Rica

Kimberly-Clark will invest $42 million in its production and supply center in Coris, as well as in its Global Shared Services Center in Costa Rica. The announcement was made on Sept. 4 during a visit of the President of Costa Rica, Carlos Alvarado, to the company’s plant in Coris, Cartago.

With the new investment, the company will purchase high-tech equipment to manufacture more baby, kids and feminine care products, as well as expand the production plant and the Global Shared Services Center.

The investment is part of Kimberly-Clark’s plan to increase its production capacity for domestic consumption and exports. The company supplies Costa Rica with a daily production of more than 3 million diapers and 2.5 million sanitary napkins. It also produces 5 million products daily to supply Central America, Panama, the Caribbean and the United States (Puerto Rico).

Kimberly-Clark employs a total of 1,500 employees in its production plant, factories, distribution center, national headquarters, regional headquarters and its global service center in Costa Rica, supporting the commercialization of several of its brands including Scott, Kotex, Huggies, Plenitud and Kleenex.
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ABB Pulp and Paper is coming to a mill near you

The ABB Pulp and Paper North American tour has kicked off and our truck is ready to stop by your mill. Your team can see, try and learn about the latest digital technologies and industry solutions you need to improve your process and bottom line—all in a mobile unit that we bring to your site. No travel required! Book your visit at www.abbnp.com

See you at the mill.
UPM to Reduce Its Uncoated Paper Capacity in Europe

UPM announced plans to permanently close a SC paper machine in Rauma, Finland and sell its Chapelle newsprint mill in Grand-Couronne, France. If realized, the measures would result in a reduction of 265,000 tonnes of SC capacity and 240,000 tonnes of newsprint capacity in UPM’s portfolio.

UPM explained that it is committed to maintaining its profitability and actively manages production capacity in line with the structural decline of the graphic paper demand. Both paper machines are the least cost competitive UPM assets in their respective product segments. The measures would help safeguard the overall competitiveness and support the long term performance of the business.

The closure of PM 2 at UPM Rauma is planned to be completed by end of 2019. Production on the remaining two paper machines in Rauma will continue as before. About 179 employees will be affected by the closure of PM 2.

As for UPM Chapelle, the company will open a bidding process for the sale of the mill. The sales process would not impact the deliveries to the customers. In case no credible offer is received by mid-January 2020, a consultation process for a potential closure of the mill would be started while the search for a potential buyer would continue. The target is to close the processes by the end of Q2 2020. Currently 236 people are employed by the Chapelle mill.

At the same time, UPM plans to establish a new Business Services Hub located in Wroclaw, Poland bringing together various customer and supplier facing services and related finance services. In total 168 positions in 11 different locations would be affected. UPM Finance & Control, UPM Communication Papers and UPM Raflatac plan to be the first users of the new Business Services Hub. The hub is planned to be in full operation by the end of Q3 2020.

Metsä Tissue to Invest In Tissue Paper Production in Sweden

Metsä Tissue has initiated an environmental permit process and a pre-feasibility study to create preconditions to double the company’s tissue paper production in two phases and to construct an automated warehouse and an office building in the Mariestad mill site.

The study is expected to be completed in the first half of 2021, in which case the final investment decision concerning the first phase could be made during the second half of 2021, after the environmental permit has been granted.

In the first phase, which is estimated to amount to approximately EUR 230 million, the plan includes a new tissue paper machine, an automated warehouse and an office building in the Mariestad mill. In this phase, Mariestad’s annual tissue paper production capacity would increase by 50,000 tonnes fully as of 2024.

“Scandinavia is our most important market area, and we’re committed to the development of our operations here,” said Esa Kaikkonen, CEO of Metsä Tissue. “Tissue paper production is local, so we want to be close to our customers to be better able to meet growing demand. For us, Sweden and Mariestad represent a good operating environment and a possibility of developing the company with our professional and committed personnel.”

Metsä Tissue noted that the plans and scope of the project may change as a result of the pre-feasibility study.

BillerudKorsnäs Announces Cost Reduction Program, Includes Staff Cuts

BillerudKorsnäs has proposed a cost reduction program that includes staff cuts in mainly administration, purchasing-related savings and efficiency improvements throughout the business.

The program is expected to generate positive effects on earnings of around SEK 600 million with lasting effects beginning in 2021. The positive effects in 2020 are expected to amount to approximately SEK 250 million.

As part of the program, BillerudKorsnäs has decided to reduce the number of employees by up to 300. This decision affects the entire operation and negotiations with the trade unions will begin shortly.

“There is considerable potential to increase our cost efficiency within BillerudKorsnäs," said Petra Einarsson, CEO and President of BillerudKorsnäs. “We are a well-positioned, fundamentally stable company that continuously improves our operational efficiency. This program will ensure long-term efficiency and profitability.”

In addition to increasing the efficiency of the business operations, the updated strategy also involves BillerudKorsnäs accelerating its innovation and repositioning solutions. The strategy focuses on clearer priorities and concrete initiatives that enable strong execution with the aim of continuing to challenge conventional packaging for a sustainable future.
Proper installation and repair of your dryer equipment will maximize drying capacity by keeping all the dryers in service. Kadant has the specialized knowledge and experience for safe, reliable, and expert installation of your rotary steam joints, syphons, dryer bars, and related equipment.
Metsä Board has started a new paperboard sheeting line at its Äänekoski mill in Finland. The value of the investment was EUR 11 million. Metsä Board said the new line will increase the annual capacity of the sheeting plant by 35,000 tonnes to a total of 120,000 tonnes, and enable quicker deliveries to its customers. In addition to the new sheet cutter, the investment included additional automation to the existing sheet cutters, as well as equipment for cutter reel handling and storage. The new sheeting line is located in the existing sheeting plant.

Metsä Board Äänekoski mill produces premium coated folding boxboard for demanding end-uses where lightweight and excellent printing properties bring benefits to the customers globally.

Klippans Bruk has started-up its new tissue machine, PM 11, at the company’s mill in Klippans, Sweden. The new machine produced its first parent roll on Aug. 19. PM 11, which was supplied by Recard, has the capacity to produce 30,000 metric tons per year of tissue paper. The machine has an operating speed of 1700 mpm and is capable of producing grammages between 14 and 26 gsm.

In a written statement Klippans said, “We are now concentrating to achieve correct specifications and reach the Klippan Tissue quality. The trimming period with start-up orders will last a couple of weeks.”

SCA plans to install a new paper machine for the production of kraftliner at its Obbola paper mill in Umea, Sweden. The new machine will boost the mill’s annual production of kraftliner from its current 450,000 tonnes to 725,000 tonnes.

The total investment amounts to SEK 7.5 billion over a five-year period and includes investments in environmental improvements of approximately SEK 1 billion, including a reduction in the need for oil by 8,000 cubic meters per year and improvements in the water treatment capacity. Following the investment, SCA’s own industrial processes will be 97 percent fossil-free.

SCA expects start-up of the new machine in the first quarter of 2023. Mats Nordlander, President, Paper for SCA, said, “With the investment in Obbola we can meet the increased demand for sustainable packaging. We have access to high quality wood fiber from Norrland. We have efficient and reliable supply of wood and logistic operations.”

The new paper machine is being constructed in a new building in line with the current paper machine. As a result, the plant will be in full production during the entire construction period before switching over from the old machine to the new one ahead of the start-up in 2023. The new plant’s ramp-up to full capacity is expected to take three years.
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Voith announced that BillerudKorsnäs on June 28 commissioned its new board machine, KM 7 in Gruvön, Sweden. The Voith XcelLine board machine has a design speed of 1,200 m/min, web width of 8,800 mm, and the capacity to produce 550,000 tonnes per year of liquid packaging board, cartonboard, food service board and liner. According to Voith, start-up took just seven days from stock on wire to paper on reel. “Not only is the start-up of the new KM 7 in Gruvön running to schedule; the collaboration with the Voith team has also been first-rate,” said Maria Engnes, Program Director NEXT Generation of BillerudKorsnäs. “As a result, we were able to meet all major milestones and have been producing high-quality liners for our customers on the KM 7 since the end of June.”

Features of KM 7’s former section include a three-ply wire section with a DuoFormer D II hybrid former, two state-of-the-art DuoShake shaking units and a fiber orientation control system. The scope of supply also includes various MasterJet Pro F systems with additional IntraDamp modules for the headbox. In the press section, a Tandem NipcoFlex shoe press with SolarPress roll covers ensures optimum dewatering.

In the dryer section, EvoDry steel cylinders are being used in a board machine for the first time. The special cylinders allow highly efficient and safe paper drying thanks to higher heat transfer and greater working width. In the finishing section, the KM 7 is the first board machine worldwide to be fitted with Curl Control. For maximum flexibility and optimum product quality, the machine also has four different coating units: two SpeedSizer AT systems, one JetFlow F and one DynaCoat AT. Both the SpeedSizer AT units and the DynaCoat AT have carbon fiber supporting structures to ensure stable CD profiles with consistent coating performance.

ABB announced that it will provide engineering, procurement and construction for the electrical, control and instrumentation portion of ‘Project Vulindlela’ at Sappi’s Saiccor Mill in Umkomaas, South Africa. Collectively, Project Vulindlela will include a new evaporator, recovery boiler and screening and washing plant, along with upgrades to bleach plant and pulp machines, improved recovery circuits and additional magnesium digesters.

Ultimately, the project will increase the Saiccor Mill’s dissolving pulp production from 780,000 tons per year to 890,000 tons per year while reducing its environmental impact.

The scope of ABB’s work includes the design, supply, installation and commissioning of all electrical and automation equipment at the Saiccor Mill.

Based on the ABB Ability™ System 800xA distributed control system (DCS), the automation solution is the first pulp and paper project to use the single channel, Ethernet-based Select IO, which enables the decoupling of project tasks. This can lead to a significant reduction in commissioning time and helps ensure on-time, on-budget project execution.

Additionally, the solution is complemented with software tools including Field Information Manager to help manage smart field devices and mobile workplaces that will give operators and production staff access to plant information from anywhere in the mill.
nature is a perfect technology
our technology is perfect for nature

Our commitment is to provide innovative technological solutions to produce sustainable tissue products.

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Körber Group has acquired Roll-Tec Cilindro Ltda based in Sao Paulo, Brazil. Roll-Tec develops, produces and sells engraving cylinders for embossing machines for tissue paper and other tissue products.

The acquisition was completed on July 31, 2019. Terms of the deal were not disclosed.

The aim of the acquisition is the further international expansion of the Körber Group’s tissue business segment, which offers complete solutions for converting and packaging machines for toilet paper, folded tissue and paper towels.

Within the Körber Business Area Tissue, Roll-Tec will work closely with Engraving Solutions in Italy and Fabio Perini’s Joinville site in Brazil.

“We are very pleased to further strengthen our position in the Latin American tissue market together with Roll-Tec and to drive forward our entry into the North American market,” said Dineo Silverio, President of Fabio Perini Brazil.

Fabio Perini is part of the Körber Group.

ANDRITZ announced that it has successfully started up the rebuilt BM1 for PJSC Kyiv Cardboard and Paper Mill at their mill in Obukhiv, Ukraine.

The rebuild of the packaging paper machine covered the upgrade of the press and calender sections, including extensions to the existing automation system.

To improve the machine’s capacity and the surface quality of the paper, ANDRITZ relocated the existing press from the second to the third press position and installed a new PrimePress X shoe press in the second position. Due to its special shoe design, the PrimePress X enables gentle dewatering and reduced energy consumption.

In the calender section, a new PrimeCal Hard hard-nip calender was installed to provide a consistent CD caliper profile, bulk control, and excellent surface finish.

The BM1 has a design speed of 800 m/min and a working width of 4.2 meters. It produces white top liner, white lined chipboard, and testliner in a range of 125–420 gsm. The machine’s primary fiber furnish is recycled paper.

Kadant Johnson LLC, a subsidiary of Kadant Inc., announced the expansion of its Services division to enhance its offerings to the paper and corrugated packaging industries.

Mark Bays was appointed service sales manager. In this role, Bays is responsible for managing the planning and execution of installation, repair, and nondestructive testing (NDT) services. He has an extensive background in field service and project management along with expertise in non-destructive testing and analysis.

Joe Jarvis and Dean Roddy joined the Services division as NDT Level III and Level II technicians, respectively. Jarvis and Roddy are responsible for Kadant Johnson NDT procedures, certifications, and training. They will also provide the inspection and reporting for various types of industrial process equipment in the field and performs installations and repairs relating to rotary joints and syphons. Both have many years of industry experience and field service knowledge.
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William Rittenhouse (1644-1708) was born in Germany, near the Dutch border. His name was then Wilhelm Rittenhausen, later changed in America. He apprenticed in a paper mill in the German city of Mulheim-Ruhr-Broich. Later he moved to Holland to stay with his older brother. Here he learned the Dutch methods of fine paper making.

In 1687, William with his son Nicholas followed other Quaker and Mennonite families who were emigrating to the newly formed neighborhood of Germantown, a neighborhood in Philadelphia, Pennsylvania. William partnered with Philadelphia’s first printer, purchased a 20-acre plot of land along Paper Mill Run (a tributary of the Wissahickon Creek) and, with the help of his son Nicholas, built the first paper mill in British North America that otherwise could only be delivered from England. For the next 40 years, the Rittenhouse family were the only papermakers in America.

**The Beginnings of Papermaking in America**

Germantown-grown flax was woven into linen and, soon as it was reduced to rags, delivered by wagons over rough dirt roads to be made into paper at the mill. The rags were soaked in water then beaten to pulp by stamping machines run by the waterpowered mill. The pulp was set in moulds and, through backbreaking labor, transformed into paper for printing and writing. Rittenhouse paper was made for the local printers in Germantown and Philadelphia and even traveled north to New York.

The Rittenhouse family paper was most widely used to produce the German language bibles that were in high demand among the growing Mennonite population — very fitting as William Rittenhouse was the first Mennonite bishop for the Germantown congregation.
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What is Voith doing to stay on top of the latest trends in the North American board & packaging industry?

For the board & packaging segment, the emphasis right now is on lighter-weight materials to reduce shipping costs without losing strength in the final package. This is key for two reasons, weight to be shipped and size of the package to allow more “boxes” to be shipped at one time. Maintaining caliper and strength for packaging at reduced weight can mean literally millions in savings per year for a reduction of just 0.1 lbs. of fiber per ream. With the advent of newer unmanned delivery options — which will happen — weight of packaging will become even more critical.

How will these efforts help your customers achieve their own goals?

Voith Fabrics and Roll Systems is well-positioned to supply our customers products to aid in keeping them competitive in the evolving markets. For board & packaging, our goal is to help customers reduce their resource use — whether it’s reducing chemical and water usage, limiting energy costs or improving the useable life of their fabrics and rolls. Along with that, most of our products, whether they are fabrics or roll covers, are also designed to feature extended run times, predictable operational results and tighter tolerances all while improving the final-product quality.

And finally, our service teams are consistently seen as the best at reducing risk in operations and at making process improvements for both quality and efficiency.

Where are your customers reporting the most growth in demand for their products?

In board & packaging, all the work is going into further development of lighter-weight products that maintain the physical and surface characteristics of the current standard-weight products. This is in response to the explosive growth in e-commerce and home delivery. Cost is the driver – cost to make and cost to ship. And, as delivery methods evolve, this will continue to get more important. Finally, paper is getting more positive attention in the packaging world as the long term effects of plastics are being discovered in terms of waste and pollution.

How is Voith helping them meet their demand?

Improved controls using the latest Papermaking 4.0 developments allow a more uniform sheet and the ability to make rapid adaptations to changes in raw materials and processes — end result is greater uniformity of product.

Packaging, in particular, accounts for over half of all worldwide paper consumption. Considering there is a big emphasis on sustainability in the industry, can you tell us how Voith approaches sustainability efforts?

Voith is committed to be an environmental leader and promotes sustainability in all of our products. Our full-line supplier capabilities allow us to use more types of recycled fibers and still...
produce a high quality paper. Our products for papermaking are developed to utilize higher percentages of recycled fiber. We have dryer fabrics developed specifically for high recycled content papers as they are contamination-resistant and by the nature of their weave they are also easier to clean, which results in less time for clean-ups.

In addition, Voith is the only supplier who has taken a position to offer our customers a program where we will take their used paper machine clothing and, through third-party recyclers, repurpose them — even if it is not a Voith fabric. This reduces landfill usage and saves our customers considerable cost.

Voith also recycles at all of our fabric and roll plants in North America. We work with our suppliers and third-party recyclers to greatly reduce our scrap. Polymers, plastic, metals, paper products and other materials are recycled, and our other waste streams are regularly reviewed to determine if more items can be recycled.

**What advances in fabric and roll systems are needed to further improve efficiencies in production?**

We see the need for the fabric and roll systems to provide more real-time feedback to the system to improve control and overall efficiency. We are actively looking at means to provide communication from the Voith-supplied component to track its performance, overall machine performance and then aid in planning for future machine outages. For instance, a typical press felt has a run interval of seven weeks. During that time, it will run about 4.5 million to 5.0 million nip cycles or crushing events. It would be very beneficial to get data from the felt as it is compacted over time to see how it was broke in and then where it begins to tail-off so that it can be scheduled off before it negatively affects production rates. In addition, the effect of changing raw materials or chemicals could also be watched for effect.

**How about digitalization?**

Digitalization is definitely the process we utilize to bring about the “talking” products and machines. Our Digital Ventures group has already developed smart and learning modules for improved controls on paper machines using conventional sensing. We are developing new sensor systems to be incorporated into our products that can be further incorporated into these modules. This Big Data approach and the self-learning adaptions will allow for both further control enhancement and responses to be continually developed.

**Safety is obviously a very important topic in the industry. Can you tell us your thoughts on how suppliers and manufacturers can continue to reduce risks?**

By its very nature, papermaking is a dangerous process. We continue to look at ways to keep people out of the operating machine while it is running — these are mechanical components and can fail even as we try to make them as infallible as possible. Voith has further improved the safety by introducing ProTect. This allows paper machine fabrics to be safely scanned and keeps people from having to be in potentially dangerous areas to obtain the readings. Digitalization will also improve safety as many more parts of the machine process will now be reporting continuously so issues can be learned earlier before any threat of damage or injury occurs. Additionally, the increased sensing also reduces the requirement of people having to verify that problems exist.

**What are your customers’ expectations in terms of service, and how are you meeting their needs?**

The best way to answer this is from two different standpoints — from the product/process support aspect and from the service/repair aspect. From the product/process support aspect, our customers expect Voith to have knowledgeable and experienced personnel who know our products and papermaking. As the level of experience in the mills decline, the Voith personnel are increasingly looked at as the troubleshooters and process optimizers. We see this change in the increase in CI/TCO requirements requested in RFP’s. Our field sales/service people are, in effect, on call 24 hours a day to aid the mills when needed. While our products are running, we are expected to make regular checks and to make recommendations to improve efficiency.

From the service/repair aspect, our customers have always expected the repairs to be made correctly, for the agreed upon pricing and that the serviced/returned product is ready to run. Now, on the roll side, we are finding more customers that want the roll repairs completed in a set time period. They just do not feel comfortable with the roll being out of the mill for long periods.

To meet the product/process needs, Voith coordinates regular meetings between its global product management group and its applications teams. Here, all regions can share experiences and product application results to expand learning. The applications teams travel regularly with the sales/service personnel and use that time to train and provide updates as to specific product attributes. Voith has also created an internal Paper School for training and is utilizing on-line learning to aid in product and process experience growth.

To meet the service/repair needs, Voith is using OPEX to improve the overall efficiency of the roll plants. Efforts to develop standardized work procedures are also under way across all roll shops. Increased use of smart tools also speeds up the repair process and reduces errors in reporting by being directly linked to the work order.
BillerudKorsnäs announced that Sustainability Director, Malin Ljung Eiborn, has been appointed Executive Vice President Sustainability and becomes part of the Executive Leadership Team, effective Oct. 1. BillerudKorsnäs noted that ‘Sustainability’ has operated as part of its communication department and now becomes a separate function at group level instead.

Rottneros has appointed Ola Thomasson as Mill Director at Rottneros Mill, effective Jan. 1, 2020. Thomasson joins Rottneros from Valmet, where he has held the position as Director Global Site Operations Tissue.

Sappi Limited announced that Michael G. (Mike) Haws has been appointed as President and CEO of Sappi North America, effective Oct. 1. Haws succeeds Mark Gardner (63), a 38-year veteran of Sappi in North America, who retired at the end of September. Gardner served as President and CEO for 12 years. Haws most recently held the position of Vice President Manufacturing for Sappi North America. Haws holds a Bachelor of Science degree in Paper Science and Engineering from the College of Environmental Science and Forestry, Syracuse, New York and has undertaken an executive education program at Harvard Business School.

Sappi North America has promoted Michael “Mike” Schultz to Vice President of Manufacturing for Sappi North America, effective Sept. 1. Formerly, Schultz served as the Managing Director of Sappi’s Cloquet, Minnesota mill. He first joined Sappi in 1990.

Smurfit Kappa Group has appointed Eduardo Rubio as the new CEO for Smurfit Kappa North America (SKNA), effective October 1. Prior to this, Rubio held the position of Vice President for the SKNA Mexican Corrugated operations. Rubio joined the company in 2010. He is a Chartered Accountant with an MBA from the New York Institute of Technology.

Stora Enso announced that its CEO, Karl-Henrik Sundström, on Aug. 26 informed the Board of Directors that he is leaving the position of CEO — a position he has held since August of 2014. Sundström will continue in his current role for the time being and will leave Stora Enso during the first quarter of 2020 once a successor is in place.

UPM Raflatac announced that Brinder Gill has joined its North America Sales Team as Area Sales Director for the Eastern United States and Canada. He joins the company from Silgan Dispensing Systems, where he served as Senior Manager, Global Beauty Category Marketing. Gill is based out of Philadelphia, Pennsylvania.

The Paper and Packaging Board (P+PB) announced the appointment by the USDA of two board members nominated and elected by companies supporting the Paper Checkoff: Fred Towler (International Paper); and Jonathan Kraft (New-Indy Containerboard). Both will take office on January 2020 for a three-year term.

The European Carton Makers Association (ECMA) has appointed Mike Turner to the position of Managing Director. Turner brings many years of industry experience to the role, including 15 years with International Paper.

The International Council of Forest and Paper Associations (ICFPA) has announced that Derek Nighbor, President and CEO of Forest Products Association of Canada (FPAC), has been elected its new President. He will serve as ICFPA President for the next two years in conjunction with his role at FPAC.
Nalco Water Innovation Delivers Value to the Pulp and Paper Industry

Water is key to our existence. It is the critical element that enables us to live, work, thrive and progress.

At Nalco Water, we empower operations around the world to protect this most vital resource. We partner with companies across a wide range of industries, working by their side to develop solutions for their specific water needs and business goals. With innovative science, digital technology, connected chemistry and extensive knowledge, our solutions help customers minimize water use and maximize water quality. This enables their operations to advance and grow in a more safe, efficient, reliable and profitable manner. In doing so, we also preserve water for our planet, with the ambition to save enough for the drinking needs of a billion people by 2030.

Water plays a critical role in virtually all pulp and paper production activities. In the context of decreased availability and growing demand, water has become a strategic resource. Our process technologies and application expertise, coupled with our core water treatment knowledge, make Nalco Water the right partner to assist with all aspects of sustainable water use.

We go beyond water management to build strong relationships with our customers through a global network of experts, continuous on-site support and system monitoring. Between our dedicated personnel and connected technology, we are always there when needed. That’s why so many companies have entrusted us with their operations over the decades. We care deeply and work tirelessly to keep water at its best – so our customers can be at theirs.

To learn more, visit: ecolab.com/nalco-water/about/industries-we-serve/pulp-and-paper
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OCTOBER 9-11, 2019
FEFCO Technical Seminar & Exhibition
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Palexpo (Geneva Airport)
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www.fefco.org/fefco-technical-seminar-2019

OCTOBER 9-11, 2019
MIAC 2019
Edipap
Lucca Fiere Exhibition Centre
Lucca, Italy
www.miac.info

OCTOBER 14-16, 2019
BLRBAC Fall Meeting
Black Liquor Recovery Boiler Advisory Committee
Crowne Plaza Hotel - Atlanta Airport
Atlanta, Georgia, USA
Contact: Barbara Holich: fhholich@aol.com
www.blrbac.org

OCTOBER 14-16, 2019
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TAPPI
Colorado Convention Center
Denver, Colorado, USA
www.correxpo.org

OCTOBER 22-24, 2019
Tissue World Sao Paulo
UBM
Transamerica Expo Center Hall F
Sao Paulo, Brazil
www.tissueworld.com/saopaulo

OCTOBER 23-25, 2019
ASPI Fall Customer Alignment Meeting
Association of the Suppliers to the Paper Industry (ASPI)
Marriott City Center
Charlotte, North Carolina, USA
www.aspinet.org

OCTOBER 28-30, 2019
RISI North American Conference 2019
Fastmarkets RISI
Seaport Hotel and World Trade Center
Boston, Massachusetts, USA
www.risinfo.com/events

NOVEMBER 18-20, 2019
Paper & Beyond 2019
CEPI
Marriott Hotel, Brussels
Brussels, Belgium
www.paperandbeyond.com

2020

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Paper Week Canada
PAPTAC
Fairmont Queen Elizabeth Hotel
Montreal, Quebec, Canada
www.paperweekcanada.ca

FEBRUARY 12, 2020
Converters Expo South
BNP Media Events
Charlotte Convention Center
Charlotte, North Carolina, USA
packagingstrategies.com/converters-expo-south

FEBRUARY 26-29, 2020
AIPPM Annual Meeting
Association of Independent Printing Paper Merchants
The Driskill Hotel
Austin, Texas, USA
www.aippm.com

MARCH 15-17, 2020
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Understanding Cardan Shaft Lubrication Options

By Frank Mathews, Motion Industries

Cardan Shaft Assemblies are an extremely reliable means of power transmission when the proper engineering and maintenance steps are taken. Ninety percent of cardan shaft failures are due solely to lack of lubrication.

When lubricating the cross and bearing assemblies, it is always a challenge to ensure all (4) bearings receive an adequate amount of grease to “purge” all old grease and contaminants. Due to the center channel being open, the grease will always take the path of least resistance. This can be very difficult while in the field to ensure all bearings are being properly lubricated. During the wearing cycle of the driveline assembly, the “pressures” upon lubrication become unequal depending on how much wear or thrust is seen per bearing assembly.

There are three types of lubrication possibilities for universal type (cardan) shaft assemblies.

CENTRAL LUBE:
This lubrication style is the most commonly used by OEM suppliers. This style features one grease fitting in the center of the journal cross. Grease enters this fitting and is evenly distributed to each of the four bearing assemblies. This style makes it difficult to ensure all bearing assemblies have received equal and adequate greasing in the field. Image 1 shows an example.

FOUR POINT LUBE OPEN CENTER:
This lubrication style is popular in the paper machine driveshaft market. Features include a grease fitting in each bearing assembly with none in the center. Grease enters a fitting and is distributed through an open journal channel to each bearing assembly. This style is popular because it allows more access points for greasing when dealing with guard interference. However, the same problem exists with this method as does central lube. It is very difficult to ensure all bearing assemblies have received equal and adequate greasing in the field. Image 2 shows an example.

FOUR POINT LUBE CLOSED CENTER:
This lubrication style is the best method to ensure proper greasing is performed. Features include a grease fitting in each bearing assembly with none in the center. On this unit, the center journal channel is blocked so that grease can only be administered to each bearing assembly individually. This ensures complete and thorough greasing of each bearing assembly. Image 3 shows an example.

When this style is chosen, there is a downfall associated when using standard grease fittings. When tight guard access is present, it can hinder greasing of all four points due to clearance between the guard and the bearing assemblies. A solution for this would be to use button head style grease fittings. These fitting provide a more secure means of greasing and requires minimal clearance in order to access greasing points.

ABOUT THE AUTHOR
A certified mechanical engineer, Frank Mathews is the branch manager of Motion Industries’ Mill Services and has eight years of experience with driveshafts and their applications. For more information, visit MotionIndustries.com/PaperAge or Mi Mill Services’ page (https://tinyurl.com/y4uxy9z).
Sustainable, responsible, innovative, recyclable and essential: These five adjectives describe a modern forest products industry that consistently meets the evolving needs of people across the country and around the world. I’ll underscore that commitment any day. Importantly, National Forest Products Week (NFPW) — #ForestProductsWeek — celebrated this year from October 20 – 26, provides a welcome stage to recognize and reinforce the contributions of our companies, their employees and an extensive range of products. We’re ready to share this story and hope you’ll join us.

AF&PA members — U.S. manufacturers of pulp, paper, packaging, tissue and wood products — are committed to applying sustainable and voluntary business practices across the value chain through our Better Practices, Better Planet 2020 initiative. Their dedication to one of the most extensive sets of sustainability goals established for a U.S. manufacturing industry led to improved energy efficiency and worker safety ahead of schedule as outlined in the 2018 AF&PA Sustainability Report.

The business practices of this responsible industry are constantly at work in undeniable ways. According to the U.S. Forest Service, the nation grows more wood than it harvests, and more than 3.2 million trees are planted per day in the United States. Sustainable forest management supports the thoughtful use of resources and furthers the health of the planet.

When it comes to being innovative, paper and wood products manufacturers display a long record of meeting the challenges of market demand with ingenuity and versatility. Take energy production. On average, about 66.6 percent of our members’ energy demand is met through carbon-neutral, renewable biomass energy when manufacturing residuals — the leftover materials from the production process like tree
limbs, bark and liquid biomass — are used to power an industry. That’s not just smart business, that’s also common sense.

Recyclable speaks to the environmental success story of paper recovery for recycling. By weight, more paper is recovered for recycling from municipal solid waste streams than glass, plastic, steel and aluminum combined, according to the Environmental Protection Agency.

In 2018, industry and consumer commitment to increasing the quality and quantity of paper recovered for recycling contributed to a record high 68.1 percent U.S. paper recovery for recycling rate. This metric demonstrates sustained progress as it has now met or exceeded 63 percent for the past decade. And, the U.S. recovery for recycling rate for old corrugated containers grew to an exceptional 96.4 percent in 2018. On the road ahead, we look forward to sharing how we’re working to further success in recycling.

Now, just try imagining a day without paper and wood products. Innovative products enhance our daily life. From wiping up spilled milk, to carrying the day’s first cup of coffee, to drying hands, holding groceries, transporting online orders, sanitizing the kitchen counter, penning a note to a friend, framing the house under construction down the street, forest products play an essential role. They allow us to connect, communicate, teach and provide for our safety, health and convenience.

During NFPW, we’ll be using our websites and digital media channels to amplify these key points and others as we educate and inform those who may not be aware of our contributions to society and the economy. Join the conversation at #ForestProductsWeek, and stay tuned to www.afandpa.org, @ForestandPaper, facebook.com/forestandpaper, linkedin.com//company/american-forest-&-paper-association, www.paperrecycles.org, @PaperRecycles and facebook.com/paperrecycling for details.

We are one of the largest manufacturing sectors in America and account for roughly four percent of U.S. manufacturing GDP, employ approximately 950,000 employees in rural and urban communities across 45 states and meet a payroll of about $55 billion annually.

Let’s celebrate that commitment to our communities as we work together to grow!
Tim Wight: The Intern Who Became a Mill Manager

Tim Wight remembers how excited he was to start work as an engineering intern at Domtar’s Port Huron Mill in Michigan in 1991. Today, as the mill’s general manager, his passion for the work hasn’t changed.

Tim Wight was studying paper science and engineering at Miami University of Ohio, but unlike many of his fellow students, he had not had any exposure to the pulp and paper industry through his community or his family. “A classmate had interned at Port Huron and encouraged me to check it out,” says Wight. “He was really enthusiastic about it and said there was a wide range of trial work going on with wet-end chemistry.”

Wight landed an internship of his own, and the experience was a positive one. “I was treated as a full process engineer; I wasn’t just crunching numbers or finding myself stuck in some corner of a lab,” he says. “I worked on things that were important to the business. After my internship, I was excited about making a career in the industry.”

GROWING THROUGH EXPERIENCE

After Wight joined Domtar, he quickly found that operations interested him more than the technical side. “The company made it possible for me to follow a path that suited my strengths,” he says.

He started working on one of the paper machines as an assistant superintendent, and then added responsibility for a second machine. Eventually, Wight became production manager. The Port Huron Mill makes publishing, technical and specialty paper grades, primarily used for books, food packaging and medical products. Process engineers play an important role in shaping the final product, participating in the development and refinement of new grades to meet customers’ unique specifications.

To fully understand the end-use requirements, engineers work directly with customers, something that Wight has always enjoyed for both the professional challenges and the personal interactions.

“Early in my career, I had the opportunity to visit one of our medical gown and drape customers to help resolve a barrier property issue they were having,” he says. “After talking with them and seeing their hydroentangling and treatment processes in person, I had a much better understanding of adjustments we could make to help them address the issue.”

PAYING IT FORWARD

After moving through several managerial roles, Wight became mill manager in late 2013. What’s kept him engaged along the way is Domtar’s unique blend of growth opportunities, interesting products and great people. And now, this mill manager is helping develop the next generation of young engineers.
Wight recognizes how much he’s learned through the experience that led to his current mill manager position, so he makes an effort to give young engineers the opportunity to work on projects outside the status quo, such as grade development and trial work. For these types of projects, the engineers are responsible for assessing and prioritizing opportunities, developing a plan and leading and executing the work.

“We go out of our way to give our interns work that helps them develop and contribute to the mill in a meaningful way. Many interns end up joining as full-time Domtar employees, just like I did 27 years ago,” Wight says.

Garrett Fisher is one such employee. Fisher joined the Port Huron Mill in 2018 as a process engineer after internships the two previous summers. As an intern, he felt more like a full-time process engineer than an intern. He regularly ran trials that had the potential to save the mill as much as $500,000 a year.

As a full-time employee, Fisher continues to strengthen his managerial and communication skills. “I had never been in charge of anything in college, and now I guide teams to complete projects,” he says. “Fortunately, I have experienced colleagues who can guide me along the way. I could not ask for a better opportunity.”

CONTINUOUS LEARNING

In addition to the type of on-the-job learning that led Wight to his current mill manager position, all Domtar employees have access to My Knowledge Tree, an online learning platform with thousands of resources covering topics like leadership skills and operations management. Many of the courses on My Knowledge Tree can be used to apply for industry-recognized certifications. Employees can seek project management certification, for example, which Wight says is particularly appealing to new graduates who might aspire to one day become a mill manager.

“Ultimately, interns today are looking for the same things I was,” Wight says. “They want to apply classroom learning to the real world, develop and grow as an engineer, and feel like they’ve brought some value to the company that hired them.”

Thanks to Wight, and others like him at Domtar, interns have a wide range of opportunities that can help shape their careers or even set them on a path that might one day lead to a mill manager position.

This story was originally posted on Domtar’s website in the “Newsroom” section. Read more stories about Domtar at: https://newsroom.domtar.com.

PORT HURON MILL AT-A-GLANCE

Originally built in 1888, Domtar’s Port Huron, Michigan mill operates four paper machines with a combined annual capacity of 113,000 short tons of paper. A strong focus on new product development has helped the mill thrive in specialty paper markets, especially in lightweight and ultra-lightweight publishing, technical and specialty paper grades, primarily used for books, food and medical packaging.

Additionally, the mill is a world leader in manufacturing base papers for the disposable medical gown and drape market. This wide variety of products and technologies offers employees the unique opportunity to develop a diversified skill set.

Certifications & Awards

- Forest Stewardship Council® (FSC®)
- Sustainable Forestry Initiative® (SFI®)
- Programme for the Endorsement of Forest Certification™ (PEFCM)
- ISO 9001
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issue machines are a substantial capital investment so it’s understandable that vetting quality, runnability, and productivity is a top pre-purchase priority to ensure maximum return on investment. However, the strict focus also causes a blind spot when it comes to converting.

In recent years, tissue converting efficiency rates have consistently remained between 40-70%. It’s a dismal showing considering the substantial role converting plays in overall tissue manufacturing success, not to mention the emphasis tissue buyers place on pack sizes, sheet counts, embossing, printing, and packaging and palletizing options.

Overlooking low tissue converting efficiency also means overlooking opportunities for improvement in operational best practices, setup times, and equipment maintenance — areas that are frequently pinpointed as the causes of lackluster converting results.

Use this checklist to review your current converting processes to reveal how you can positively influence your converting efficiency:

1. **Materials:** The quality and uniformity of parent reels dictate converting performance. Inspecting parent reels for breaks, rejects, and variations in properties (BW, bulk, strength), stretch, and tension reduces waste in materials and production time.

2. **Training:** Training is a vital component of converting success, especially for equipment operators. A program that focuses on the basics such as job responsibilities, operational specific tasks, proper personal protective equipment (PPE), converting machinery operation and maintenance, lockout/tagout procedures, etc., is a strong start. Another key element of training is ensuring maintenance staff knows how to make the fine adjustments required to keep machines running efficiently in addition to proficiency in roll changeouts and other more routine tasks.

3. **Workspace Organization/Work Standardization:** Lean Six Sigma practices are common in the identification and elimination of waste in the value stream, and not surprisingly customers gravitate toward these efficiencies with regard to tissue conversion. Implementing Lean philosophies in workspace organization and work standardization may seem like small steps, but the time savings it generates translates across the board.

4. **Production Planning and Setup:** It’s highly inefficient to schedule multiple short runs of different products on the same line due to the amount of cumulative downtime needed for changeovers — one of the biggest contributors to OEE (Overall Equipment Effectiveness) loss. Another factor negatively impacting OEE is equipment alignment in terms of having downstream equipment being capable of handling the throughput speed of the upstream machinery. For example, if your packaging equipment can only handle 6 cases per minute but your converting equipment is producing 12 cases per minute, your OEE will suffer.

5. **Spare Parts Accessibility:** Much like the simplification in workspaces and work brought about by Lean practices, having fast and reliable access to spare parts — particularly through an OEM — minimizes converting disruption and allows for better management of lead times and customer response times.

6. **Maintenance:** Proactive equipment maintenance does more than keep converting lines moving and promote machine longevity. It helps tissue manufacturers optimize
production and leverage OEE — a leading key performance indicator in manufacturing process availability (downtime), performance (production speed), and quality (products meeting standards).

7. Technology: Tissue manufacturers all over the world recognize that adopting technology is key to meeting customer demand. Advancements in the Internet of Things (IoT), robotics, artificial intelligence, 3D printing, and wearable technologies are transforming how products are designed, manufactured and serviced — as well as engaging and empowering employees to a greater degree.

Low tissue converting efficiency is a challenge, but focusing on particular areas of your operation should deliver improvements across the production process.

Scott Hansen is Technical Service Manager for Fabio Perini North America. He has over 30 years of experience in the tissue and non-woven converting field. Scott spent more than 12 years with a multinational converter prior to joining FPNA, where he has held roles as a service technician, trainer, supervisor and department manager. He can be reached by email at: [insert email].
As interest groups raise awareness about plastic waste, governments around the world are starting to ban various types of plastics, especially single-use packaging items. We all know the reasons behind this push: Plastic waste is filling our landfills and waterways and breaks down very slowly in the environment.

Ultimately, the impact will not be confined to items such as grocery bags and straws. Analysts expect the movement to extend to plastic bottles, disposable cups, food service packaging and ready-meal containers. In fact, several major consumer brands, as well as a significant number of European retailers, have moved to reduce or eliminate their use of plastics in packaging. And more will certainly follow.

Renewed Focus on Paper Materials
In this new paradigm, the pulp and paper industry has an opportunity to rise to the challenge of providing more environmentally friendly fiber-based solutions to replace all those plastic straws, bottles, disposable cups and food containers. But before that happens, it’s important to address the foundational aspects of packaging production that will enable these products to be replaced with environmentally friendly alternatives, especially in food applications.

The Enabling Technologies
Almost anything, of course, is technically recyclable at a cost. But what makes a paper package most valuable in this new world is whether a material is repulpable. To this end, the goal is to replace paraffin wax or polyethylene (PE), fluorocarbon for grease barriers and the use of PE in cups and food-service applications. To achieve this goal, special formulations are required for paper packaging that act as a barrier to water, hot/cold liquids, greases and oils, moisture and water vapor — to name just a few. Suitable replacement formulations include barrier biowaxes used for different applications. Individual barrier products can also form a “system” consisting of one to three different coatings, each having different functions, with the final system design depending on the end producer’s requirements.

As the packaging industry moves toward fiber-based material for more sustainable solutions, there are some key issues to consider when it comes to paper material formulation.

Is it repulpable? Repulpability enables creation of a segregation system for post-consumer cups that can be repulped, where the fiber is recovered and reused to produce paper and paperboard products, perhaps even back into cups.
The value of the fiber in these cups is very high, enough to make it economically feasible to develop the infrastructure needed to collect, segregate and recover these containers after use. Therefore, the barrier formulation should enable repulpability. This is not typically economically viable with PE-coated cups.

Is it compostable? The long-term objective, of course, is to recover the fiber. In the short term, if the material can be redirected to composting facilities — as opposed to landfills — this helps with consumer messaging and is a step forward for brand owners and the environment as well. As a result, fiber material with compostable barrier formulations have a significant advantage over PE products, which cannot be composted. However, this is still secondary to repulpability.

How is the formulation produced? This is a key point on sustainable sourcing, where many consumer brand owners have aspirational goals of using more than 50 percent sustainably sourced raw materials. Manufacturers of paper barrier coating formulations are seeking to minimize non-fossil fuel derived components and maximize renewably sourced raw materials. Some barrier solutions for example are 100% non-fossil based.

Is the barrier formulation functional? Barrier formulations must meet the functional requirements of the material being replaced. These requirements include resistance to oil, grease and water in applications like hamburger wrap, and resistance to staining for on-the-go coffee cups. Many paper-based packages are designed for consumer appeal and branding, and involve printing, sealing, gluing, flexibility and elasticity. As a result, paper barrier formulations must still allow the same packaging functionality while meeting sustainability goals.

Does the formulation facilitate manufacturing? One of the biggest advantages with some barrier coating formulations is that you can apply them using paper machine coaters, off-machine coaters or even flexo/reverse gravure printing presses. With some barrier coatings you can even convert the coated board into cups on existing cup-making machines designed to work with PE. As a result, very little capital expenditure is required to utilize these barrier systems; paper manufacturers can run them now if they have a coater.

The good news is that awareness of fiber as a functional packaging alternative continues to gain ground. For example, in the Next Gen Cup Challenge, a global consortium that includes major food industry players recently issued a challenge to “identify and commercialize existing and future solutions for the single-use, hot and cold fiber cup system.” Solutions could include cup lids, sleeves and straws, as well as reusable and alternative delivery systems. Nearly 500 entrepreneurs, inventors and scientists from more than 50 countries, including a team from Solenis, responded enthusiastically with ideas and potential solutions. Solenis was recognized as one of 12 final winners, and work to scale its proposed solution is underway.

Working together, the paper industry can make a difference in reducing plastic waste in the environment and supporting the circular economy in 2019 and beyond.

Ricardo De Genova is Vice President, Strategic Marketing and R&D – Paper for Solenis. He can be reached at: RDeGenova@Solenis.com.
Improving Overall Equipment Effectiveness

Maintenance planning and scheduling certification of cross functional teams improves mill productivity and cuts costs.

After completing a facilities consolidation program, a major pulp and paper mill in the Southeastern U.S. turned to maintenance optimization to improve overall plant reliability and maximize productivity. The goal: run remaining paper machines harder, faster and longer without compromising safety, quality or the environment.

This type of comprehensive reliability improvement program involves the standardization of maintenance procedures, improved planning and scheduling for maintenance related activities. It relies on key performance indicators (KPIs) such as the number of emergency work orders, the percentage of work orders labeled “urgent” and spending as a function of asset replacement value to verify results and track progress. It also calls for maintenance workers and engineers to properly trained, certified and coached on best practices.

Challenge

- Improve maintenance procedures
- Increase output from fewer machines
- Train, certify and coach staff

Solution

To meet these challenges head-on, the mill partnered with ABB to identify and implement a variety of these maintenance improvement initiatives. The first step involved conducting a benchmark study to ascertain the mill’s current state of maintenance. From this study, a list of prioritized recommendations was developed.

ABB settled on a mix of classroom training, in-field and on-the-job coaching, follow-up audits and refresher courses for key personnel from each of eight critical areas: paper-making (involving three specific paper machines), the waste treatment plant, the bleach plant, the unbleached pulp mill, the power generation facility, the chemical recovery area and the wood-yard. Each team received customized training designed to improve its knowledge base and performance.

Traditionally, each of these functional areas had its own processes and procedures, developing standardized processes and work practices was critical. To achieve this, everyone received the same classroom and field training and the same tests. This ensured the mill could place the right personnel into the role best suited for their skills and knowledge.

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<th>ASSESSMENT</th>
<th>CLASSROOM TRAINING</th>
<th>IN-FIELD COACHING</th>
<th>WRITTEN</th>
<th>PLANNING &amp; SCHEDULING PROCESS AUDITS</th>
<th>RESULTS &amp; CERTIFICATION</th>
</tr>
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<tr>
<td>Assess planning and scheduling organization</td>
<td>3-4 days</td>
<td>1 week per planner</td>
<td>Based on classroom training document</td>
<td>2-3 days per planner</td>
<td>Each planner receives a certificate from ABB University for the level reached</td>
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<tr>
<td>Evaluate planner capabilities</td>
<td>Single point lessons</td>
<td>Daily and weekly scheduling meetings implementation</td>
<td>Go no / go for certification</td>
<td>35 technical topics and 8 management topics</td>
<td>Meeting with planning and scheduling client project leader and individual planners to present results</td>
</tr>
<tr>
<td>Evaluate training and coaching needs</td>
<td>Exercises</td>
<td>Team backlog review</td>
<td>Documentation not allowed</td>
<td>Score provided for each topic for the group average and individual</td>
<td>Identify with clients needs and re-training, re-coaching or additional support</td>
</tr>
<tr>
<td>Define performance measurement</td>
<td>Start work on weekly agenda, backlog review, scheduling tool, KPI development</td>
<td>Identification of improvement opportunities and best practices</td>
<td>80% required to pass – 2nd try allowed</td>
<td></td>
<td></td>
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Putting the Team Back into Teamwork

In many industrial facilities, a certain level of competition exists between the operations and maintenance personnel — each has its own agenda. For instance, operations personnel are aggressively customer- and product-driven, while maintenance personnel pride themselves on the preventive maintenance activities that eliminate unplanned downtime and equipment failures.

To bridge this divide, ABB's reliability-related training and certification program involves personnel from both camps. Because reliability is everyone's responsibility, this approach helps everyone to understand and appreciate each other's roles, motivations and responsibilities.

Another useful element of the certification process is to define so-called “swim lanes” so the roles, responsibilities and accountability for each job title is clearly defined and understood by all stakeholders. In this way, workers are able to focus just on their work instead of being concerned about the roles of others.

Site Specific Training

The industry-specific curriculum developed by ABB for the certification process combines industry best practices with lessons that are tailored to meet the mill's site-specific issues and needs. Common topics include maintenance planning and work prioritization, backlog management, parts management, spare parts identification, time estimation for work order execution, work permit estimation and more.

Results

As a result of ABB's reliability improvement initiatives, the mill achieved a four percent improvement in overall equipment effectiveness (OEE) across all three of its paper machines. OEE measures how well machinery, production lines and processes are performing as a function of availability, performance and quality.

Similarly, maintenance spend as a function of average replacement value ratio (spend/ARV) at the facility improved from 3.1 to 2.7. This means the mill spends far less to maintain the same set of assets. This method of measuring maintenance costs allows the mill to benchmark itself to others mills and manufacturing facilities to determine if its maintenance spend is best-in-class or if there is room for improvement.

Benefits

■ 4% improvement in OEE
■ More collegial work environment
■ Improved spend/ARV ratio
■ ABB University certification

To learn more about the information provided in this article, email: automation.service@us.abb.com.
The paper mill which marked the birth of papermaking in Canada was built in Quebec, on the Rivière-du-Nord, about two kilometers upstream from its junction with the Ottawa River. The land was owned by the seigneur of this area (Argenteuil), Major Patrick Murray who, although it was not common practice, lived within his seignory. The Major seems to have strongly encouraged the development of industry, such as mills, in this area in order to attract settlers to his land around the small village of St. Andrews.

From Cyrus Thomas’ History of the Counties of Argenteuil, Quebec & Prescott, Ontario (1896), it is known that Major Patrick Murray needed a hydraulic engineer to help realize his dream of a mill, so he found and hired Thomas Mears to build a dam and aqueduct in order to power a sawmill. This dam extended across the river at an island providing a head of six to seven feet. A photograph from the 1920s shows the remnants of the dam so its location can be precisely fixed.

The link between Thomas Mears and what was then the papermaking center of Newton Lower Falls in Massachusetts is not clear, although we can surmise that Mears may have come from, or passed through, that area because word spread about the potential for a paper mill in St. Andrews.

Consequently, a young papermaker from that area, by the name of Walter Ware, decided to investigate this Canadian prospect. He knew the trade from his father John Ware who had built and operated a paper mill on the Charles River in Massachusetts since 1790.

Ware encouraged several young papermakers to come with him: Benjamin Wales and his brothers Nathaniel and Samuel, Gustavus Adolphus Hooker, Artemus Jackson and William Zearns, as well as millwright John Harrington.

In 1803, Walter Ware signed an agreement with Major Murray to occupy six acres of land and free waterpower for 30 years. However, because the land was not suitable for building, Ware bought more from the Delorme family and built the mill a year later in 1804. Ware was also busy organizing supplies of rag as raw material and a market for the finished products. Ware made arrangements with James Brown (a stationer recently arrived from Quebec.

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A bronze plaque that was mounted on a rock monument in St. Andrews East in Quebec designated the site of the first paper mill in Canada — the Argenteuil Paper Manufactory.

In September of 1805, the first paper was produced in Canada.
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where he had worked with Canadian Gazette publisher John Neilson) for Brown to buy all the production of printing and writing paper and also to collect rag from both Montreal and Quebec City in order to have the mill supplied.

However, the first season at the mill — Argenteuil Paper Manufactory — passed with no paper. Production through the winter would have been a shockingly cold trade for those now involved who were accustomed to the milder climate of Boston. The beater in a poorly heated mill building would have frozen solidly — there would have been damage due to the warping of wooden parts. Surface sizing with animal gelatin would be next to impossible with the changes in temperature. Anything hung in the loft would have frozen solidly. As well, shipping by riverboat would have been impossible because of the frozen river.

The following year, 1805, production finally commenced. Brown received his first shipment of wrapping paper in September followed by a shipment of printing some of which he sent on to the publisher John Neilson in Quebec, with the note, “not much use for anything but blotting”, adding, as a cryptic comment, “These Yankees”.

If you visit the site of St. Andrews today, you will find an historic marker with the name of James Brown but no one else. The dam was destroyed 1834 in a spring flood and never rebuilt. Even after this catastrophe Brown wanted to rebuild and continue, but the new seigneur, Sir Christopher Johnson, refused to extend the lease for the hydraulic rights which had expired after 30 years. Without these rights, a mill could not exist.

Excerpt from “200th Anniversary of Papermaking in Canada” by Pulp and Paper Canada, September 1, 2005. The complete story can be found online at: www.pulpandpapercanada.com/200th-anniversary-of-paper-making-in-canada-1000198774
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of interest

The Advent of the Paper Machine

In 1798, the Frenchman Nicholas-Louis Robert (1761-1828) invented a prototype of a machine on which paper was formed on a continuous sheet of wire cloth. The invention was patented on January 18, 1799. After Robert left the French army, he had gone to work as a proofreader for the noted printer Pierre-Francois Didot, and was soon placed in charge of the accounting department at son Saint-Léger Didot’s mill in Essones, France. While there, Robert had conceived the idea of a machine to produce a continuous roll of paper to fill the urgent need for banknotes after the French Revolution. Saint Léger Didot encouraged Robert to use the mill’s workshop and materials in the development of the paper machine.

After five years of work, Robert completed the design and sold his patent rights to Saint Léger Didot for the sum of 27,400 francs. Financial difficulties at the mill, however, prevented Didot from paying Robert for the patent, and although Robert eventually recovered ownership, he was never able to realize any money for his invention.

The Fourdriniers

Didot took the models created by Robert to his English brother-in-law, John Gamble, who secured English patent 2487 for an improved version of the machine in April 1801. The improved machine came to the attention of brothers Henry and Sealy Fourdrinier, who engaged engineer Bryan Donkin, a skilled and ingenious mechanic.

Donkin, along with the Fourdriniers, built an improved version of the Robert original, which was installed at Frogmore Paper Mill, Apsley, Hertfordshire, in 1803, followed by another in 1804. A third machine was installed at the Fourdriniers’ own mill at Two Waters. The Fourdriniers also bought a mill at St Neots intending to install two machines there, and the process and machines continued to develop.

Although the Fourdriniers invested up to 60,000 pounds on the development of this machine, they received no royalties because of an error in their patent. They did gain some recognition, however, as most modern paper machines are referred to as “fourdrinier” machines.

Donkin was the only person who gained financial security from his work on the paper machine. By 1851 he had designed a total of 191 machines, including 83 for British mills, 105 for Europe, one for India, and two for the United States.

The First Paper Machines in America

The first fourdrinier machine in the US was imported from England and erected in Saugerties, New York, in 1827. The second was built in Connecticut by mechanic George Spafford. He and his partner, James Phelps, completed the first American-built fourdrinier in May 1829 and sold it to Amos Hubbard at a cost of $2,426. Hubbard had been operating a handmade paper mill in Norwich, Connecticut and was a chief supplier to the American Bible Society.

In 1809, a cylinder-type paper machine was introduced by John Dickinson of Hertfordshire, England. Amid great secrecy, Thomas Gilpin built the first cylinder machine in America at Brandywine Creek, Pennsylvania. It produced a sheet 30 feet wide at a rate of 60 feet per minute.
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