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On the cover. One of Glatfelter’s early Fourdrinier paper machines, circa 1880s. Photo courtesy Glatfelter.
“Devoted to the Interest of the Paper & Pulp Industry” — that was the motto printed on the masthead of the first issue of *United States Paper Maker*, published on April 15, 1884 by Charles C. Walden. The first issue was 16 pages in total. It was printed in Holyoke, Massachusetts, which at that time was referred to as “The Paper City” due to the large number of paper mills in that region. At some point during the decades that followed, *United States Paper Maker* became known as *PaperAge*.

But the really big news is that 2014 marks the 130th anniversary of *PaperAge* and its roots. Although I’ve been involved with the production of the magazine just a bit shy (ahem) of all those years, *PaperAge* has been a part of my life since my early teens. As many longtime readers of this magazine may know, my dad is the one and only Jack O’Brien — the former editor and publisher. And he’s alive and well at 87; still plays golf a couple days a week and actually walks the golf course with his clubs on a pushcart!

Jack’s background in the paper industry goes back to the mid-1940’s, as did that of his father, John J. “J.J” O’Brien, who had held the position of editor and eventually publisher of *Paper Mill News* and Post’s Directory (now Lockwood-Post Directory published by RISI) for over 20 years. My dad worked with his dad during that time, but upon J.J’s retirement and the sale of both publications in the early 60s, Jack took a job with Miller Freeman Corp., the publisher of *Pulp & Paper*, as an editor and New England sales manager.

With the paper industry booming back then, in September of 1971 a guy by the name of Ken Johnson had just bought *PaperAge* from Charles C. Walden III. Ken had served as sales manager for *Pulp & Paper* and *Pulp and Paper International* for 18 years and knew the paper industry extremely well. During those years he had also developed a friendship with Jack.

Not long thereafter, the headlines of a news story in the February 1973 edition of *PaperAge* read, “New England Publishing Executive Joins PaperAge Management Team.” I’ll give everybody one guess who that was – Jack O’Brien.

Sadly, 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 the lead of *PaperAge*.

Through the years the pages of *PaperAge* have delivered countless news stories, paper company profiles, technological developments from industry suppliers and conducted interviews with people who have shaped the industry and also with those who have simply been a part of it.

“Devoted to the interest of the paper & pulp industry?” Yeah, I think you could say that.
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Will you be the next deinker to hit the ‘trifecta’?
Atlantic Packaging announced a definitive agreement to purchase International Paper’s three largest paperboard converting facilities in Greensboro, North Carolina, Hazleton, Pennsylvania, and Sturgis, Michigan.

“This is a real game changer for our family company,” said Rusty Carter, Atlantic President. “Overnight this gives us a major presence for all of our business segments in the Southeast, Northeast, Midwest, and soon the Southwest, with a planned new facility in Dallas, giving us a full national footprint.

The acquired facilities convert (sheet and rewind) bleached paperboard produced primarily at IP mills in Riegelwood, North Carolina; Augusta, Georgia; and Texarkana, Texas. The sheeting plants serve as finishing departments and distribution centers for national product coverage.

Greg Gibson, Vice President and general manager of coated paperboard for International Paper said, “Atlantic Packaging is a leading paperboard converter with a great reputation for quality and service. This transaction offers considerable marketplace advantages for both companies.

“International Paper gains significant supply chain flexibility to support our Carolina® and Everest® brands and job opportunities for our employees in three facilities,” Gibson said.

Upon completion of the deal, Atlantic will employ over 900 people and will be the largest converter of bleached paperboard in North America.

Greif Sells Multiwall Packaging Unit to Industrial Opportunity Partners

Greif has sold its Multiwall Packaging Division to Industrial Opportunity Partners (IOP), a private equity firm based in Evanston, Illinois.

Terms of the deal were not disclosed.

The Multiwall Packaging Division, founded in 1950 as a division of Greif, produces large format multiwall paper bags used primarily in industrial applications of agricultural and food grade products. Multiwall operates facilities in Rosemount, Minnesota and Omaha, Nebraska.

“The sale of the Multiwall Packaging Division supports our ongoing efforts to sharpen our focus and strategically align the Greif core business portfolio and key growth drivers,” said David Fischer, President and CEO of Greif.
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Streco Fibres, a wholesale paper distributor based in Virginia Beach, Virginia, announced that it is continuing to expand outside North American markets through its international sales department which is focusing on Mexico, Asia, South America and Europe.

Streco has also expanded its warehousing facilities around the world and its global network of paper mills and other suppliers. The company supplies first-line industrial and fine papers, as well as side trims and joblot.

“Streco Fibres will continue to adapt its business model to meet the many challenges facing the paper business and will continue to bring value to paper mills and converters throughout the world for years to come,” said John Strelitz, President of Streco.

“In twenty six years of business, we’ve maintained a reputation as a paper company who is focused on sourcing high-quality materials and providing excellent customer service,” Strelitz added.

**NORTHERN AMERICA**

**Streco Fibres Announces Further Global Expansion**

**FutureMark Paper Group Indefinitely Idles Alsip Coated Paper Mill**

FutureMark Paper Group at the end of August “indefinitely” idled its coated paper mill in Alsip, Illinois due to “increasingly challenging market conditions in the North American coated paper market.”

The Alsip mill, formerly owned by Myllykoski and known then as Madison Paper Company, operates one machine and has the capacity to produce about 135,000 tpy of coated groundwood paper. In November of 2009, Myllykoski sold the mill to The Watermill Group, a private equity firm, who renamed the operation FutureMark Paper Company.

“We explored many options to avoid this action, but the brutal reality for all coated paper manufacturers today is that falling demand and pricing pressure from lower-quality uncoated substitutes has driven prices to near historic lows,” said Stephen L. Silver, CEO of Alsip. “Combined with massive increases in energy costs over the winter, this pricing pressure has made it impossible for us to continue our Alsip operations at this time.”

In a press release, the company added, “Alsip explored all alternatives for avoiding this shutdown, including expanded debt facilities, attempts to locate new investment and possible sale of the company. Alsip also received cooperation from its union and salaried employees in the form of wage concessions, however, some recent operational issues on top of continued poor market conditions led to a severe liquidity crisis.”

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Pulp, paper and energy producers worldwide rely on Valmet’s advanced and competitive technologies and services. Every day, our 11,000 professionals work close to our customers to reach sustainable results. Read more and find out how we can help move your performance forward at valmet.com
Cascades plans to install a new tissue converting facility in Wagram, North Carolina. The estimated cost of the project is US$55 million.

In a press release, Cascades said, “This investment will reorganize and expand the Company’s converting activities in the Southeastern United States — a targeted area of growth for the Corporation.”

The total annual capacity for the new converting plant is about 10 million cases on six converting lines, with the capacity to produce various tissue products including bathroom tissue, kitchen towels, paper napkins and hand towels for both the Away-from-Home and Consumer Products markets.

Resolute to Permanently Shut Down Laurentide Paper Mill

Resolute Forest Products on Sept. 1 announced the permanent closure of its Laurentide paper mill in Shawinigan, Quebec, Canada.

In a press release the company said, “The restart of a competitor’s mill at the end of 2012, the high cost of fiber, as well as higher transportation and fuel costs, have affected the mill’s competitiveness.”

Richard Garneau, President and CEO of Resolute, said, “We made every effort to find a way to improve the Laurentide mill’s performance. Unfortunately, due to its cost structure and challenging market conditions, there is no economically viable option for the mill.”

Back on November 26, 2012, Resolute permanently shut down one of the mill’s two paper machines, PM 10, which had the capacity to produce 125,000 metric tons per year of commercial printing papers. At that time, the company explained that a substantial drop in demand and an increase in market capacity of the paper grade produced on PM 10 were factors behind the decision to close the machine.

In operation for over 126 years, the Laurentide mill employs 275, with an annual production capacity of 191,000 metric tons of commercial printing papers on one paper machine, PM 11.

The permanent closure will take effect on or about October 15, 2014.
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iRoll is an online measurement system for board, paper and tissue machines. In iRoll, sensors are installed on the roll body to detect load profiles. The load profiles can be a direct result of paper tension, paper caliber, size press rod loading, nip pressures, or number of other variables. iRoll is much more than just a monitoring system, it controls product quality to tight tolerances.

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**NORTH AMERICA**

**Glatfelter to Acquire Electrical Papers Producer in Germany**

Glatfelter has signed a definitive agreement to purchase all of the outstanding equity of Spezialpapierfabrik Oberschmitten GmbH (SPO) from FINSPO Beteiligungs for EUR 8.5 million (approximately U.S. $11 million).

SPO has annual sales of approximately EUR 25 million (U.S. $33 million).

“This acquisition will further our Composite Fibers business unit’s strategy of capitalizing on the fast-growing electrical market by expanding our electrical papers product platform,” said Dante Parrini, Chairman and CEO of Glatfelter. “In addition to serving Europe, we intend to leverage Glatfelter’s growing presence in Asia to meet the needs of the high concentration of electrical customers in this region.

SPO’s plant is located near Frankfurt, Germany. Its primary electrical products and applications include highly technical papers for a wide range of capacitors used in consumer and industrial products; insulation papers for cables and transformers; and materials for industrial power inverters, electromagnetic current filters and electric rail traction.

Glatfelter expects to close the proposed deal by early October. Upon closing, the acquired business will become part of Glatfelter’s Composite Fibers business unit. The acquisition of SPO will complement Glatfelter’s previously announced partnership with Dreamweaver International to develop and manufacture lithium ion battery separators, which utilize Glatfelter’s capabilities and expertise in making advanced fiber-based engineered materials.

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**EUROPE**

**Mondi to Shutdown Paper Machine 1 at Lohja Mill**

Mondi on August 21 informed its employee representatives about the planned shutdown of paper machine 1 at its Lohja mill in Finland.

The shutdown is expected around June 30, 2015, Mondi said.

The Lohja mill currently employs about 170 people and a maximum of 75 employees are estimated to be affected by the restructuring.

Mondi Lohja produces coated and uncoated specialty kraft papers for the release liner and release base markets, the medical, food packaging and food service markets.
The FabriCare™ ECOfficiency concept uses high pressure needle jets to clean the paper-side of the fabric directly on a roll. The needle jet has the highest cleaning capacity but uses low cleaning pressure and low water consumption. The rebound of the water jet from the fabric and roll surface carries the released contamination into the cleaning head. The vacuum created directly inside the head transports the debris further to the save all.

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- Vacuum produced by using low amount of mill air supply - no need for additional evacuation sources like vacuum pumps or regenerative blowers in combination with a water separator.
- The application prescribes the quantity and size of the nozzles – variable adaption
- The FabriCare design does not require a suction hose inside the beam which could get clogged.

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EUROPE

BillerudKorsnäs to Invest SEK 900 Million at Frövi and Rockhammar

BillerudKorsnäs plans to invest some SEK 900 million in its Frövi and Rockhammar mills, targeting increased capacity and improved quality of cartonboard and liquid packaging board produced at the mills.

The investment includes a rebuild of the board machine, BM 5, at the Frövi as well as a capacity upgrade of the Rockhammar pulp mill.

“We have set an ambitious growth agenda for BillerudKorsnäs,” said Per Lindberg, CEO of BillerudKorsnäs. “For the business area Consumer Board, the strategy is profitable volume growth.”

After completion in 2017, the investment will bring the Frövi mill’s capacity to 550,000 tpy of high quality cartonboard and liquid packaging board. Currently the mill has the capacity to produce 430,000 tpy.

The Rockhammar mill’s capacity will increase up to 150,000 tpy of CTMP (chemi-thermomechanical pulp). It supplies Frövi with CTMP for the production of board grades.

SOUTH AMERICA

Stora Enso, Arauco, Inaugurate Montes del Plata Pulp Mill

Stora Enso and Chilean pulp producer Arauco on Aug. 8 officially inaugurated their 50:50 joint venture — the Montes del Plata pulp mill in Punta Pereira, Uruguay. The Uruguayan President José Mujica together with government officials from Uruguay, Finland and Sweden were among the 1,500 guests who participated in the opening ceremony.

The total investment in the mill amounted to just over $2.2 billion.

The Montes del Plata’s pulp mill’s annual capacity is 1.3 million tpy of bleached eucalyptus kraft pulp. Stora Enso’s portion is 650,000 tpy, which will be sold as market pulp.

The mills’ surplus power generated will feed the national grid, supplying up to 80 MW, equivalent to use by 200,000 Uruguayan households, through renewable and sustainable transformation of biomass.

Montes del Plata will also provide the sewage and water works system with an effluent treatment plant for the city of Colonia, an effluent pre-treatment plant in Carmelo, a sewage treatment plant in Conchillas and a potable water plant also for Conchillas.

MEXICO

Kimberly Clark de Mexico Starts Up New Tissue Line

Kimberly Clark de Mexico recently started up a seventh tissue machine supplied by Valmet at the Bajío mill in San Juan del Rio, Mexico.

The new Advantage DCT 200TS tissue line adds 60,000 tpy of high quality tissue paper to the current production of facial, toilet, napkin and towel per year.

Valmet’s delivery included a complete tissue production line featuring stock preparation system and an Advantage DCT 200TS tissue machine a width of 5.4 meters and a design speed of 2,000 m/min. Project scope included basic mill engineering, process equipment and process ventilation, as well as the installation supervision, training and commissioning of the new tissue line. The delivery also included an automation package from Metso.

Kimberly Clark de México operates five tissue mills in Mexico producing facial, toilet, napkin and towel grades for the domestic consumer & away-from-home markets as well as for exports.
From increasing fiber yield to maximizing energy efficiency, we make the best solutions possible.

For more than 100 years, papermakers have relied on Kadant to optimize paper mill performance. And today, our commitment to making the best solution possible is just as strong. We continue to invest in people, technologies, and product innovations to help our customers maximize product quality, productivity and operating efficiencies.

From fiber processing and water management to doctoring and drying, put Kadant’s application expertise and process knowledge to work for you to improve your papermaking operations.

Visit us online at www.kadant.com and see what the paper people at Kadant are doing today to solve the papermaking challenges of tomorrow.
Valmet has been contracted by Pratt Paper for the supply of a paper machine for Pratt’s new greenfield paper mill in Valparaiso, Indiana. The value of the order was not disclosed.

Valmet’s scope of delivery will include a complete OptiConcept M board production line from headbox to winder. The new machine will have a wire width of 6.25 meters and a design speed of 1,200 m/min.

“OptiConcept M is a new and modular way to design, build and operate a paper machine,” said Mike Gray, SVP Sales, Valmet North America. “Its modular approach enables short delivery times, quick start-up and low project costs.”

The mill will use recovered paper as a raw material to produce recycled linerboard and corrugated medium.

Start-up of the new machine, PM16, is scheduled for 2015.

AkzoNobel and Photanol Collaborate in Developing “Green” Chemical Compounds

AkzoNobel and cleantech company Photanol have teamed up to develop a process for harnessing the power of the sun to make chemicals.

The two companies will work on creating sustainable technology which mimics the way plants use photosynthesis. The aim is to produce “green” chemical building blocks that will eventually replace raw materials AkzoNobel currently obtains from fossil-based production.

“Given the challenges the world is facing in terms of resource scarcity, we are actively looking for bio-based alternatives for our chemicals, and Photanol’s existing technology is a potential game-changer,” explained Peter Nieuwenhuizen, AkzoNobel’s Director of Innovation and Partnerships.

The collaboration is focused on Photanol’s existing proprietary technology, which uses light to directly convert CO2 from the air into predetermined raw materials such as acetic acid and butanol. The only by-product is oxygen.

The two companies will start by developing a number of specific chemicals that are currently used by AkzoNobel’s Specialty Chemicals Business Area. The partnership is intended to be a stepping stone for potential commercial production of fourth generation bio-based chemicals.

Xerium Building New Rolls and Service Facility in Turkey

Xerium Technologies is building a new rolls and mechanical services facility located in Corlu, Turkey. The facility is under construction and the equipment is already on hand.

From this geographic location, Xerium will provide its full suite of patented performance-enhancing roll solutions to customers in the surrounding region. The new facility will perform roll grinding, roll recovering and mechanical services on site.

Xerium is also increasing its field sales and service staff for the region for machine clothing, roll services, mechanical services and machine automation through its SMART® Roll sensor solutions.

The plant will be co-located on the grounds of Modern Karton, one of the largest and most integrated producers in the region.

The new plant is expected to be in production in the first quarter of 2015.

Omya, NewPage, Kick Off PCC Plant Operation at Escanaba

Omya and NewPage on August 14 kicked off operations with a ribbon-cutting ceremony at the precipitated calcium carbonate plant located at the NewPage Escanaba paper mill site.

PCC, an essential raw material used in the papermaking process, lends to key properties such as bulk, opacity, brightness and whiteness.

With the PCC plant on-site, the mill saves on transportation costs, while the environment also sees its share of benefits from the plant. Before the new plant was in operation, the CO2 produced by the mill was emitted into the air and considered waste. The on-site plant uses CO2 generated by the Escanaba mill in the process, reducing the environmental impact.
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Forest companies in Northern Europe have announced plans to invest three billion dollars in 2014 in an attempt to move beyond mostly producing newspaper and commodity packaging grades. The idea is to diversify their product lines to include new bio-products from wood fiber and to generate bioenergy to reduce the region’s dependence on fossil fuels, reports Wood Resource Quarterly (WRQ).

The pulp and paper industry in the Nordic countries has started to see a new dawn with a growing demand for pulp and paper products made from long wood fiber from the vast conifer forests in Northern Europe. Just over the past few months, there have been a number of announcements in investments made by forest companies in Finland, Norway and Sweden totaling close to three billion dollars, WRQ reports.

The primarily end-products will be softwood market pulp and virgin fiber-based container board, but major investments are also being considered in increasing the utilization of forest biomass for energy on a larger scale. Although the investment decisions have not been finalized for all projects, these ruminations are a sign that the forest industry in this part of the world sees the future in a much brighter light than just a few years ago.

In addition to the investments in the pulp and paper industry, there has also been an announcement that the Swedish forest owner federation Sodra, together with the Norwegian energy company Statkraft, Europe’s largest producer of renewable energy, intends to establish a biofuel conglomerate at the site of the now closed pulp mill in Tofte, just south of the capital Oslo.

In Finland, Metsä Fiber has plans to invest 1.5 billion dollars in a plant that will produce softwood pulp, renewable bioenergy and what the company categorizes as “various bio-materials.”

Some of the factors that have placed softwood fiber in a new positive light are: limited investments in the establishment of softwood plantations worldwide, favorable global supply / demand balance for softwood pulp over hardwood pulp, (if you are a pulp manufacturer), increased demand for packaging material requiring wood fiber with high strength, and a rise in research in new products made from trees, sometimes as substitutes to non-renewable materials such as plastic and metal.

According to WRQ, these recent developments in the Nordic countries may very well be the beginning of the biggest transformation of the softwood fiber-based forest industry we have seen in decades, not only in Northern Europe but in other regions of the world as well where coniferous forests is the dominant forest-type.

**SUPPLIER NEWS**

**Lined Valve Product Line Available through Henry Pratt Co.**

Henry Pratt Company has extended its product line offering with the Lined Valve Company line of knife gate valves. The addition of the Lined Valve Company line of products gives Pratt one of the broadest valve product offerings in the United States.

All of the valves Lined Valve offers to the pulp and paper industry are appropriately designed for the harsh environment of the mill, i.e. pulping, brown stock washing, black and green liquor, causticizing, washing and bleaching, stock preparation. For further information, please visit: www.linedvci.com

**BIO-PRODUCTS**

**Stora Enso to Build Cellulosic Biomass Demonstration Plant in Louisiana**

Following its recent acquisition of the US-based biotechnology company Virdia, Stora Enso is investing $43 million (EUR 32 million) in a demonstration and market development plant to be built at Raceland, Louisiana. The plant will be used to test the commercial viability of the extraction and separation technology developed by Virdia that enables cellulosic biomass, such as wood or agricultural waste, to be converted into highly refined sugars.

Stora Enso noted that depending upon the results of the new plant, it may possibly apply the technology at its pulp mills.

According to Stora Enso, the plant will be situated in the vicinity of existing sugar cane plantations and will use bagasse waste as feedstock. It will be used to produce high purity five-carbon sugars and, in particular, xylose. These sugars will be converted and upgraded for applications in, for example, food and personal care.

The Raceland plant is scheduled to start production early 2017.
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**PAPER**

- Appvion recently appointed Ethan Haas as vice president and general manager of the company’s carbonless and specialty papers business. Haas comes to Appvion from NewPage where he served as vice president of broker, international, pulp and auxiliary markets, a NewPage business group.

- Cascades announced in August that Suzanne Blanchet, President and CEO of Cascades Tissue Group would leave the Tissue Group to join the corporate ranks of the Cascades’ management team as Senior Vice-President, Corporate Development, effective September 2014. Jean Jobin succeeds Blanchet and adds the title of President to that of Chief Operating Officer, which he already holds.

- CTI Paper USA announced that John Hubbard has joined the organization as Sales and Promotion Manager, West Region. Hubbard has over 25 years of industry experience including both merchant and mill sales and sales management positions.

- International Forest Products LLC (IFP) announced that Chris Monroe and Bart Swaim have joined the company’s Recycled Fibers sales team. Monroe will serve as Senior Director of Secondary Fibers for IFP and focus on export sales. Swaim will serve as Director of Secondary Roll Sales, managing the secondary roll sales and warehousing for IFP’s Recycled Fibers group.

- International Paper announced that the board of directors has elected Mark S. Sutton Chief Executive Officer, effective November 1, 2014 and chairman of the board effective January 1, 2015. Sutton currently serves as president and chief operating officer. Prior to his current role he was senior vice president, industrial packaging. Sutton succeeds John V. Faraci, who has served as CEO and chairman of the board of directors since November 2003.

- Liberty Diversified International (LDI) has promoted Larry Newell to Vice President, Paper Manufacturing. Newell also will continue to serve as general manager of LDI’s Liberty Paper mill in Becker, Minnesota.

- Södra announced that Karin Emilsson, Director of Technology, has decided to leave the company at year-end. Emilsson has been with the company for 27 years and held the position of Director of Technology since 2008.

**RECOGNITION**

- Jack Haren, President and CEO of Mohawk, has been named “2014 CFO of the Year” by Albany Business Review. The Albany Business Review CFO of the Year award recognizes an outstanding financial executive who is a leader in the community, and is helping their business grow.

- Richard Garneau, President and CEO of Resolute Forest Products, has been named to Canada’s Clean50, an award that recognizes leaders who have made the greatest contributions to sustainable development or clean capitalism in Canada.

**IN MEMORY**

- R. W. (Bill) Burrows, Chairman and Chief Executive Officer of Burrows Paper Corporation died peacefully at home on August 20 surrounded by his loving family. He was 64. Mr. Burrows became president of Burrows Paper two years after joining the company in 1974. He was elected President and CEO in March 1986 and succeeded to Chairman of the Board later that year following his father’s death. Under his direction, the company made business growth investments a priority, while focusing with equal fervor on improving the organization’s structure and preserving the unique Burrows culture.
OCTOBER 8-10, 2014
ASPI Fall 2014 Customer Alignment Meeting
Association of Suppliers to the Paper Industry (ASPI)
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www.aspinet.org

OCTOBER 8-10, 2014
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OCTOBER 8-11, 2014
AIPPM Fall Conference
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Des Moines, Iowa, USA
www.aippm.com

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Paper Industry International Hall of Fame
The Radisson Paper Valley Hotel
Appleton, Wisconsin, USA
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OCTOBER 28-31, 2014
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www.papfor.com

OCTOBER 29-30, 2014
Paper Recycling Conference Europe
Recycling Today Media Group and Smithers Pira
Marriott Milan
Milan, Italy
europe.paperrecyclingconference.com

OCTOBER 29-31, 2014
PPC Fall Meeting and Leadership Conference
Paperboard Packaging Council
Loews Atlanta Hotel
Atlanta, Georgia, USA
www.paperbox.org

NOVEMBER 5-7, 2014
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www.risinfo.com/events

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Groundwood Market Slump Continues Due to Weak Demand, Excess Supply

The winds of change may soon sweep through the groundwood paper business which would be a good thing for a market that is severely oversupplied in some segments and in general continues to fight declining demand. A lot depends on a potential major merger which if enacted is expected to result in significant capacity adjustments.

By Harold M. Cody

The market for groundwood papers remains mired in a slump characterized by sluggish and falling demand for most grades acerbated by overcapacity in the lightweight coated sector. Coated mechanical prices slipped further in late-summer and market reports characterize demand as ranging from “terrible to challenging.” Uncoated mechanical grades are faring a little better and demand has actually stabilized in recent months although within individual grade segments results vary quite a bit.

The groundwood papers market is to some extent on hold pending the Verso/NewPage merger, which remains the big elephant in the room and the topic of water cooler conversations industry wide. It’s widely expected that — and the industry seems to be waiting for — a range of capacity adjustments would be forthcoming if the merger goes forward in order to balance out supply and demand as well as to optimize the combined company’s mix of mills and machines in order to maximize efficiency and lower costs across their mill system. In North America NewPage and Verso are the top two coated groundwood producers with about 1.8 million tons of capacity.

However, while the industry was holding its collective breath waiting for the merger, two events in September put the merger topic on the back burner. First was the announcement of the closure of the 168,000 tpy coated paper mill in Alsip, Illinois, and shortly thereafter an even larger capacity reduction was announced by Resolute at its publication papers mill in Quebec. Resolute’s Laurentide mill makes SCB and soft nip groundwood specialty grades on one 200,000 tpy paper machine and which accounts for a big chunk of the North American supply of these grades.

The two above-mentioned closures will remove almost 400,000 tpy of capacity mostly on the lower end of the quality spectrum relative to standard LWC and SCA grades, but nevertheless its impact will be notable on the overall market. Resolute is the largest producer of uncoated groundwood grades in North America with capacity for about 1.4 million tons and by far the largest producer with roughly one-third of industry capacity.

Shrinking Demand

Recent data clearly delineate the challenges facing the industry. North American printing and writing paper demand through the first half of 2014 continues to shrink and was down 3.0% vs. 2013 at 10.59 million tons with shipments off by 4.4% at 9.8 million tons. Coated mechanical demand at 1.69 million tons was down 7.4% vs. the same period in...
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2013. Shipments were off by just 4.8% at 1.58 million tons owing to a nearly 6% gain in coated groundwood imports. Uncoated mechanical grades fared the best of any printing and writing paper grade with demand essentially flat compared to last year down 0.3% to 2.08 million tons. Uncoated groundwood shipments by North American mills were off 0.8% at 2.08 million tons.

While the drop in demand has moderated for now, demand for uncoated groundwood grades continued to contract as expected last year as well. Demand fell significantly for some grades led by a 14% drop in lightweight (directory) paper demand and a 2.5% drop in standard grades. In contrast, SCA demand is reported to have growth by about 20%. Total demand for uncoated grades in 2013 was about 4.5 million tons including an estimated 2 million tons of standard grades, just under 700,000 tons of SC-B and soft nip papers, 1.3 million tons of SCA and 400,000 tons of lightweight papers. While the 2013 total is about the same level as in 2012, it’s down considerably from 5.6 million tons as recently as 2010.

Newsprint mills also continue to suffer and this continues to have an impact on groundwood markets. N.A. newsprint demand is off by 6.6% through the first half of 2014. Even more worrisome is that fact that offshore exports are down 5.6% through June and were off 8.4% in June vs. the prior year.

Underlying Factors
The background behind these challenging market conditions is that groundwood printing grades continue to fight a wave of negative trends including continued losses in key printing markets such as catalogs, direct mail, directories and other traditional uses. Direct mail was impacted to some degree by a postal rate increase. Postal volume data for the last three quarters through June 2014 shows standard mail volume down 0.6% in pieces and 1.3% in weight. In the third quarter, standard mail pieces actually were up 0.9% but weight was off 2.7%. In addition, gains made over the last couple of years replacing newsprint in some uses appears to have eased or ended.

The most pressing problem right now for the groundwood market centers on the weak market for coated mechanical printing papers including both the higher quality No. 4 grades and well as No. 5 grades. In addition to this year’s decline, coated groundwood demand fell 7% in 2013 to 3.7 million tons. By contrast, in 2010, coated groundwood demand in North America was 4.5 million tons. Imports have fallen from a level of nearly one million tons in the late 2000s to 444,000 tons in 2013 which was a modest decrease from 2012 levels.

Pricing Weakness
In particular, the problem for coated mills has been a steady erosion in pricing. Observers report that the price weakness, as indicated by the shipment and demand data, wasn’t due simply to a fall in demand, but rather more due to an excess of supply. That’s really a glass is half full vs. half empty argument but it shows that additional capacity closures are likely needed.

Prices slipped further on coated groundwood grades late this summer falling about $10-$20 ton over the June to August period. Prices have now fallen by over $100 per ton compared to prior year levels on No. 4 and No. 5 grades. Current pricing on No. 5 grades is about $800/ton on offset grades. SCA prices have also slipped considerably but haven’t fallen quite as far and are at a current level of about $775 per ton, but this is compared to $830 per ton in August 2013. Coated groundwood prices are now at the lowest level since 2010 and have been trending down since early last year. SC prices also moved down in the U.S. in July.

The oversupply problem is clear as coated groundwood mills ran at an average of 84% in July and 87% year to date, compared to 95% and 92%, respectively for the same periods last year. Uncoated mechanical mill operating rates in July were 90%, which is about the same as reported in 2013.

One development worth noting is that the very low prices for coated groundwood is reported to have slowed the shift by some publishers and printers away from coated grades to attractively priced SC uncoated grades. Unfortunately it’s hard to see how users that moved to SC papers when the price differentials were high would switch back to more expensive paper even if the price differential narrowed. In today’s highly competitive market it’s difficult to justify paying higher prices for paper. In the machine finished grade segment, some mills continue to benefit by higher brightness uncoated mechanical grades taking some share away from uncoated freesheet.

Conclusion
Given the huge uncertainty on the supply side it’s impossible to really predict the direction of the market and in essence it remains in limbo until the supply side shakes out. Pending a remarkable and unanticipated turn up in demand this fall, with prices on LWC grades near historical lows, something will have to give, and additional closures are likely. It just remains to be seen how long it takes.

Harold Cody is a contributing writer for PaperAge. He can be reached by email at: HCody@paperage.com.
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Recovery and Bio-Activities Continue in Europe

By David Price

It cheers me enormously to write an optimistic comment for this journal’s 130th anniversary issue. When I joined the industry 26 years ago there were 44 magazines in Europe on the industry. Now, there are only five of any significance. So a 130-year-old North American magazine which is still with us deserves, at least, heritage status or should be in the Paper Hall of Fame!

Recovery, Reinvestment Continues

The following major European players — UPM, Stora Enso, SCA, Billerud-Korsnäs, Norske Skog, Smurfit Kappa and David S Smith — all have posted improving first half 2014 results. Reasons for the recovery were well covered by their CEOs in second quarter comments. They included sales growth, higher earnings, cost reductions and savings, technical and product innovations (especially in tissue and packaging grades), entry into emerging markets like China and Latin America, and relentless focus on cash flow.

For Europe, the results showed a marked north, east and south divide in economic performance. The north and eastern European countries did well, but Mediterranean Europe’s performance was moderate — Portugal’s central bank, as just one example, is broke.

Second quarter/first half results for the major European producers show steady growth and rising profits — the best year so far since the recession began in 2008…and there’s more to come.

The first half of 2014 also marked the retirement, after seven years as CEO, of Stora Enso’s Jouko Karvinen, whose presence and colorful comments will be much missed in the industry. He will be succeeded by Karl-Henrik Sundström.

This past summer, a good number of mill projects have either been slated to begin or have started-up, including BillerudKorsnäs’ SEK 900 million investment in its Frövi and Rockhammar mills in Sweden. And there’s more. I trawled the industry websites in August and September and found some 20 or so other business activities. There are too many deals to individually list here, but they include eight acquisitions, eight updates or upgrades, two start-ups, and the sale of two mills. If you include these projects and other recent developments, there has been a substantial amount of reinvestment activity in Europe’s paper and forest products sector in the past few months.

Bio-Activities

In the last issue of PaperAge, the Editor candidly admitted to his “lightbulb” moment about the industry becoming more and more serious about bioenergy and bioproducts when Georgia Tech changed the name of its Institute of...
heads up

Paper Science and Technology (IPST) to the Renewable Bioproducts Institute. I shared his long-held skepticism because I felt our industry was drifting into the conventional energy business, which is a very different sector. I am slowly becoming convinced that the industry is turning the corner on renewable fuel sources.

UPM’s CEO, Jussi Pesonen, is committed to the change in his industry. In his first-half 2014 comments he stated, “Biofuels opens up a new horizon for our growth prospects. The Lappeenranta biorefinery, the first of its kind in the world, will start producing clean, technologically advanced renewable diesel. The refinery is expected to start commercial production this fall.”

Pesonen is in good company. Last July the EU and industry partners launched a $5 billion project on Bio-based Industries (BBI) which will develop an emerging bioeconomy sector. There are six industry partners from agriculture, agro-food, technology providers, forest & pulp and paper, chemicals and energy. The aim of the BBI is to use Europe’s untapped biomass and wastes as feedstock to make fossil-free and green products such as chemicals, materials and fuels, all “Made in Europe.” The project is supported by 70 individual companies, six of which are from the forest products sector and will create thousands of jobs, 80% of which will be in rural areas where our industry has taken the biggest hits.

Expanded R&D

R&D in the forest & paper sector will look at lingo-cellulosic residues for bio-based chemicals and biomaterials, new sustainable pulping technologies, new products from the pulping process, and fibers and polymers from lignin. The BBI has called for all proposals to be in by 18 October.

Stora Enso’s acquisition of US biotech company Virdia has been followed by a $43 million investment on a demonstration and market development plant at Raceland, Louisiana. Local sugar cane plantations will supply bagasse waste as feedstock which in turn will be converted into high purity five-carbon sugars, in particular xylose which is used in food and personal care. Startup is early 2017.

A joint venture between Norwegian energy company Statkraft and the pulp mill at Swedish-owned Sodra Cell Tofte will create a company to produce biofuel based on forest raw material. The Tofte mill in east Norway is close to forest plantations and a deep-water port. State-owned Stakraft is the major partner (51%) and is Europe’s largest producer of renewable energy.

For the last 10 years I’ve worried about the future for our industry. Now, with a clear pathway visible, and not one I envisaged, I’m much more optimistic.

David Price is a contributing writer for PaperAge. He can be reached by email at: DPrice1439@aol.com.

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On January 31, 1898, 17 leading pulp and paper companies with a combined 20 mills located throughout five northeastern states in the U.S. merged to form International Paper. The new company had one million acres of timberlands, with the properties ranging as far north as Canada. In addition, streams and rivers running through the properties were used to operate the mills with hydroelectric power.

By 1900, IP’s mills provided 60 percent of U.S. newsprint.

In 1903, IP bolstered its research and development efforts when it opened the Central Test Bureau in Glens Falls, New York. The new research lab was initially manned by one employee.

IP’s ability to generate power played a dominant role in its early years. As household electricity demand grew in the 1920s, the firm established large hydroelectric plants and power companies. At one time, it produced enough electricity to light all of New England and most of Quebec and Ontario. Thusly, in 1928 International Paper & Power Company was organized in Massachusetts to acquire International Paper. IP continued to operate as a subsidiary of International Paper & Power.

Not long thereafter, however, the United States in 1935 passed the Public Utility Holdings Act, making it illegal for an organization to run both an industrial firm and a power company. As a result, IP began to divest itself of its energy and power business and turned its focus towards paper and packaging – a focus it would come back to some 70 years later.

In the 1920s and 30s, IP expanded into the southern United States to take advantage of the warmer climate which allowed trees to grow more quickly and in greater volume than they could in the North. It also enhanced the company’s ability to manufacture stronger grades of packaging paper as a result of kraft process for pulping.

In June 1941 a new company was incorporated to acquire the assets of International Paper & Power Company – International Paper Company.

During World War II, International Paper did what it could to support the war effort. Its contributions included the development of nitrate pulp for use in explosives and the develop-
During World War II, International Paper took part in the development of a waterproof board called V-board (victory board), which was used to make boxes to send food and other supplies to the troops. The new technology, along with the wartime inventions of other manufacturers, led to increased competition after the war. As a result, IP began to invest more capital in research and development. Shortly after the war, it established the Erling Riis Research Laboratory in Mobile, Alabama.

An emphasis on packaging products also characterized the firm’s progress in the 1940s. In December 1940 it acquired the Agor Manufacturing Company, which included three subsidiaries and four container plants in Illinois, Kansas, Massachusetts, and New Jersey. In June 1941 IP merged the Southern Kraft Corporation with its main business. Previously a subsidiary, Southern Kraft owned eight kraft board and paper mills in the southern United States. IP also bought the assets of a shipping-container maker, the Scharff-Koken Manufacturing Company.


IP’s Canadian subsidiary, Canadian International Paper Company, also made its share of acquisitions in the 1950s. These included Brown Corporation in 1954; Hygrade Containers Ltd. in 1955; and Anglo American Paper Company, Mid-West Paper Ltd., Vancouver Pacific Paper Company, and Victoria Paper Company in 1959.

**BIGGER NOT NECESSARILY BETTER**

The 1960s and 1970s however proved challenging for IP as its plans for growth reached well outside its core products of pulp, paper and packaging. The company delved into areas as far ranging as residential construction, prefabricated housing, nonwoven fabrics, consumer facial tissue, and disposable diapers. It also moved into lumber and plywood.

Diversification can be a tough road to take and results were mixed. To make things tougher, the paper industry in the early 70s swung towards a cyclical recession and IP was forced to lay off 7 percent of its employees.

But IP during the mid-60s and early-70s wisely didn’t ignore its bread and butter paper operations and invested some $1 billion to increase the company’s paper and converting production capacity by 25 percent. In addition to its domestic endeavors, IP purchased corrugated container plants in France, Spain and Italy.

**MAJOR PLANT MODERNIZATION PROGRAM**

Between 1975 and 1980, IP’s operating profits were mediocre, and in 1979 Edwin Gee stepped in as chairman. A chemical engineer, Gee recognized that many of the company’s 16 pulp and paper mills – all built in the 1920s and 1930s – were highly inefficient with labor and energy. Immediately, he instituted a $6 billion program to modernize the mills. Gee’s goal was to turn the world’s largest paper company into one of the lowest-cost producers of white paper and packaging materials, thus making it one of the most profitable papermakers as well.

In 1981, IP sold Canadian International Paper for US$900 million. In addition, Gee increased the R&D budget and reduced IP’s workforce by 20 percent.
In the same year, John Georges became chief operating officer. Georges sought to improve the company’s product mix by converting a number of existing mills towards production of higher demand products. For example, IP spent $500 million on repurposing a Georgetown, South Carolina, mill, changing its product focus in the process. Instead of brown linerboard, a cyclical product, part of the mill was set up to make white papers.

In addition, Georges began a $350 million project to convert another mill in Mobile, Alabama. The 60-year-old facility, which housed the company’s last remaining newsprint machine, was also refitted to produce white papers in 1985, marking the end of the company’s longstanding newsprint business. In 1987, newsprint prices began a steady decline.

**DIVERSIFICATION OF PRODUCT MIX**

During the 1980’s, the white paper market seemed to be one of the few that was profitable, so Georges hired a team of scientists and technicians to promote business in that area. Their work led to a major acquisition in 1986 – Hammermill Paper Company. The $1.1 billion purchase increased IP’s white paper capacity by 750,000 tons and provided the technology to produce premium paper lines.

In 1985, Georges succeeded Gee as chairman. Under Georges’s leadership, IP again headed towards a diversification of its product mix with a strategy to offset its exposure to certain cyclical markets in the paper and packaging industry. A number of areas the company entered involved specialty products with higher margins such as specialty papers, films and non-woven fabrics. Unlike its diversification program in the 1960’s, Georges’s plan resulted in greater success.

In the early-90’s, IP made a number of papermaking acquisitions in Europe and gained a presence in the Pacific Rim through a $258 million purchase of a 16 percent interest in the leading New Zealand forest products company, Carter Holt Harvey Ltd. (CHH). IP increased its stake in CHH in 1992 to 24 percent by investing an additional $298 million.


Federal Paper was Georges’s final deal and he announced his retirement as chairman and CEO, in early-1996. Overall, during Georges’s leadership and massive diversification program, annual revenues at the company quadrupled to nearly $20 billion.

**RESTRUCTURING AND ACQUISITIONS**

John T. Dillon, previously president and COO, succeeded Georges as chairman and CEO. Taking a different tact than his predecessor, Dillon decided to address the company’s long-term debt and targeted certain areas of the company, including some of IP’s timberlands, to divest. Dillon’s major restructuring plan included selling more than $1 billion in underperforming assets or businesses.

Dillon’s restructuring plan wasn’t only based on divestment, though. Within his strategy were a number of major acquisitions: IP’s North American distribution business, which changed its name from ResourceNet International to xpedx in January 1998, expanded in July of that year with the purchase of the Mead’s Zellerbach distribution unit. Also added in 1998 was Weston Paper and Manufacturing Company. Based in
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Terre Haute, Indiana, Weston operated 11 corrugated-container plants in the South and Midwest. In December 1998 International Paper expanded in Eastern Europe with the purchase of Svetogorsk AO, a Russia-based pulp and paper company.

Then, in April 1999, Dillon orchestrated the huge stock-swap acquisition of Union Camp for about $7.9 billion, including the assumption of about $1.6 billion in Union Camp debt. Strategically, the deal played to IP’s manufacturing strength – uncoated paper and containerboard.

Acquisitions under Dillon’s leadership continued in 2000, with Shorewood Packaging and Champion International. International Paper had made great strides via Dillon’s ambitious restructuring program, and it remained the world’s largest forest products company while appearing to have transformed itself into a more competitive and potentially more profitable giant.

TRANSFORMING A GIANT

In November of 2003, John V. Faraci was named Chairman and CEO of International Paper upon Dillon’s retirement. Faraci had served as President of IP since February 2003 and served as its Chief Financial Officer from 1999 to March 2003. Prior to that he had served as CEO and Managing Director of Carter Holt Harvey from 1995 to May 1999 – a company that IP had held a 50.5 percent stake in until September of 2005 when it sold its shareholding for $1.14 billion.

Faraci joined IP in 1974 out of graduate school and has served with the company ever since. Just two years into his tenure as chairman and CEO, he announced that IP would embark on a “transformation plan” that would create a slimmer, fitter, more efficiently performing and profitable International Paper.

The transformation plan began with a realignment of IP’s then diversified product mix. “We stepped back and decided to focus the company on areas where we think we can build a sustainable advantage and earn much better returns than IP and the industry have earned historically,” Faraci told PaperAge in an interview in February of 2006. Those areas would be uncoated paper and packaging grades.

The plan also generated over $10 billion in after tax proceeds from the sale of non-core businesses – a figure (and then some) IP would soon invest in future acquisitions and joint ventures, which not only allowed IP to grow in a production capacity sense, but also enable it to extend its reach geographically to emerging markets around the world.

Joint ventures included a deal in 2006 whereby IP and Shandong Sun Paper agreed to form a 50:50 joint venture for coated board production in Yanzhou City, Shandong Province, China. Then in October of 2007, IP and Russia’s Ilim Group formed a 50:50 joint-venture.

“As we continue to transform International Paper, focusing on our global uncoated paper and packaging businesses, the joint venture with Ilim positions us very well within low-cost, high-growth markets in Russia and Asia,” Faraci commented.

On the domestic front, IP in August of 2008 completed the acquisition of the containerboard, packaging and recycling business assets of Weyerhaeuser for about $6 billion, and in February of 2012, finalized hard-nosed negotiations for Temple-Inland valued at about $4.3 billion. At that time, Temple-Inland was ranked as the third largest containerboard manufacturer in North America (IP being number 1). The two deals put IP in control of about 33% of North American containerboard capacity.

John Faraci will retire in March of 2015 – truly the end of an era at IP – turning the reigns over to Mark Sutton, who is currently serving as president and chief operating officer. But employees and investors alike are assured that the company’s future is in very capable hands. “Under Mark’s leadership, I am confident that International Paper’s best days are ahead,” Faraci said about Sutton.

There may not be any paper company in history that has lived through such a diverse mix of parts — many of which have come and gone — as International Paper has during its 116-year existence. Hydroelectric power plants, real estate in the form of vast forestlands, lumber mills, chemical plants, residential home building, prefabricated housing, nonwovens, and even a crude oil company, all called themselves members of the International Paper family. But after all the trials and tribulations brought to bear by diversification and restructuring programs, International Paper today has somehow found its way back to where it first got its start — making pulp, paper and packaging.
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Hidden Energy Savings Add Up

There may be numerous areas in a mill and around a paper machine where energy loss is present but appears slight. But, finding and correcting these “insignificant” faults can add up to huge savings at a very small price.

By Jeff Chaloux and Jim Maggard

Identifying energy saving opportunities in the mill and on the paper machine is a constant activity. Huge savings usually come at a significant capital cost. But many smaller hidden opportunities can add up to thousands, even millions collectively. Here are ten tips to help you achieve considerable savings, when you apply your knowledge and modest investments.

**Gains from vacuum condenser energy monitoring**

Many dryer drainage systems discharge wet end dryers and differential vent valves to a vacuum condenser. Water is circulated through the heat exchanger to condense the discharged steam and create a vacuum. Monitoring the vacuum condenser is actually an excellent way to track dryer section energy efficiency. Any steam vented to the vacuum condenser is a loss from the system and should be considered a waste. A well-designed dryer drainage system will have losses to the condenser less than 3% of the total steam flow to the dryer section. Many machines have losses that are in the range of 1% to 2%.

How is energy loss to the vacuum condenser monitored? By measuring the heat gained by the cooling water. The heat gain can be calculated from the cooling water flow, water temperature into the condenser, and water temperature out of the condenser. These measurements can be made with a portable water flow meter and a thermometer. Many machines are installing permanent devices to measure and record the information in a data historian. The trend line will quickly show when the energy efficiency of the system is changing. Low energy efficiency can be caused by something as simple as a poorly maintained vent valve from one of the steam sections or something more complicated like mis-sized syphons or thermocompressors.
Notching up machine runnability in small ways
Runnability directly and adversely affects energy consumption as well as production. If the sheet runnability is poor, machine speeds are often reduced to minimize sheet breaks. This directly reduces machine production. Time lost to sheet breaks further reduces machine production. To make matters even worse, the energy consumed during sheet breaks is substantial, even higher than the energy consumed during normal production, but with nothing to show for it. With a dry end sheet break, the paper is formed, drained, pressed, and dried, then dumped into a pulper. Pulpers and pumps come on and fresh water is dumped into the system to dilute the broke.

Even during a wet end break, drives, lubrication systems, hydraulic systems, vacuum pumps, fans, showers, and heaters continue to run. Ventilation fans exhaust hot dry air and steam systems vent excess blow-through steam to a condenser or to atmosphere. Anything that can be done to improve machine runnability (improved weight profiles, improved press dryness, shorter dryer sections, blow boxes, suction pick-up rolls, ventilation air control, threading devices, supervisory control systems) will also help to reduce the amount of energy consumed.

Machine clothing and saving energy
Forming fabric design has a direct effect on drainage rate, sheet formation, and sheet properties. The fabric permeability may affect the vacuum load and air flow requirements — and perhaps the frictional drag over stationary forming elements — but these are typically smaller effects. Dryer fabric tension, permeability, surface cleanliness, and (to a lesser degree) fabric construction can affect the drying rate and drying capacity, but dryer fabrics do not have a direct effect on the amount of energy required for drying.

Press fabrics, on the other hand, have a direct and significant effect on energy consumption. The press fabric construction, wet permeability, and re-wet control directly affect the dryness of the sheet leaving the press. A one percentage point change in the moisture content of the sheet leaving the last press nip can result in a 4-5% reduction in the amount of water that must be removed in the drying process.

How stationary syphons reduce papermaking energy consumption
Stationary syphons can be used to drain condensate from steam-heated paper dryers. They do this with lower differential steam pressures and lower "blow-through" steam flows than that required for draining dryers with a rotating syphon. In a cascade steam system, this results in less blow-through steam being vented to atmosphere or to a condenser.

In a thermocompressor system, this results in less high-pressure (motive) steam to recompress the steam for re-use. When properly sized and installed, they can also greatly reduce the tendency for the dryers to load up with condensate ("flood"). Stationary syphons also reduce the amount of upset that occurs during a sheet break and correspondingly reduces the tendency for venting. In some cascade systems, larger main control groups can be utilized, therefore capacity can be increased by raising pressures or a smaller number of dryers vent a smaller amount of blow-through steam.

Using the DCS to monitor energy consumption
The mill Distributed Control System (DCS) and process historian (process database) are very powerful tools for monitoring and trouble-shooting machine operations. But there may be more to the story. Not all process flows and valve positions are measured, displayed, and recorded by the DCS. Routine operator rounds can fill in the gaps. Operators can see when safety relief valves or vent valves are open or leaking, when rotary steam joints are blowing steam, when condensate is being dumped into the sewer, when compressed air lines are left open, when ventilation systems are out of balance, where dump valves and by-pass valves are inadvertently left open, and when seal pits are flooded over. Open drains result in not only lost energy, but also in lost condensate and lost boiler feed water treatment chemicals.

Thermography using infrared camera systems can be a very effective tool in finding energy losses that are not visible to the eye: steam leaks, hot spots in insulated panels, pipes, separators, and valves, and the ubiquitous defective steam traps. An observant operator, DCS displays, process historian data, and an infrared camera are all integral parts of a complete energy management program.

How the silo/wire pit steam control valve can help
As cooler fresh water (typically referred to as mill water) is added to the machine white water system, the silo/wire pit steam control valve must open to maintain the target system temperature. As the volume of cooler fresh water introduced...
into the white water system increases, the more the steam control valve must open and the greater the steam demand required to maintain system temperature. This is most often observed during machine startups or machine upset conditions, such as sheet breaks. It is not uncommon for a substantial amount of energy to be lost during these upsets in an attempt to keep the wet end fiber loop “warm”. Many machines cannot keep up during these upsets and overall cooling occurs, resulting in an overall loss of production.

**Steam boxes have surprising strengths**

Heating the sheet in the wet end or in the press section will increase the dewatering capability and deliver a drier sheet to the dryer section. This will reduce the amount of energy consumed in the dryer section to achieve the desired sheet moisture.

The amount of energy saved in the drying process is often less than the amount of energy used in heating the sheet. As a general rule, the press section will increase the sheet dryness by one percentage point for every 10°C increase in sheet temperature. The sheet strength, however, also increases with increasing dryness and this helps to improve sheet runnability — an added bonus!

**Fresh water into white water system takes heat**

White water systems are typically controlled to a targeted temperature. When fresh water is introduced into the white water system, this water must be heated to maintain the system at the desired temperature. Running increasingly closed systems has many advantages, especially energy savings.

To calculate the annual cost (350 operational days) to heat fresh water to process temperature with low pressure steam, one can use the following equation:

- **STEAM COSTS FOR:**
  - 1 Hour $ = GPM*8.25*ΔT*60*$MMBTU/1,000,000
  - 24 Hours $ = (GPM*8.25*ΔT*60*$MMBTU/1,000,000)*24
  - 350 Days $ = (GPM*8.25*ΔT*60*$MMBTU/1,000,000)*24*350

WHERE:
- GPM = Gallons per Minute
- 8.25 = Conversion Factor GPM to lbs/min
- ΔT = Delta T of Inlet Temperature to Process Temperature

**Sheet moisture at the reel matters**

The moisture profile and moisture level both have direct effects on each other and on the resulting energy consumption. One of the often-used tools used to fight a poor moisture profile is lowering the moisture content. This levels the moisture profile, but it also increases the amount of water that must be evaporated. It increases the amount of fiber that is required to achieve the specified reel weight and it reduces the overall drying capacity (the drying rate for a dry sheet is very low).

It is more cost-effective to achieve a uniform cross-machine moisture profile without drying below the average moisture required to achieve the finished sheet properties.

It is more cost-effective to achieve a uniform cross-machine moisture profile without drying below the average moisture required to achieve the finished sheet properties. As a bonus, basis weight profiling systems, profiling steam boxes, moisturizing showers, and caliper profile control devices can be used to optimize sheet properties and not used to correct for non-uniformities.

**Piping Insulation - The Rodney Dangerfield of Energy Conservation**

Does your mill have hundreds of feet of exposed steam and condensate pipes? Sometimes insulation was removed for maintenance work, or is in such poor condition that it provides little insulation value. A lack of good pipe insulation is often overlooked when assessing energy conservation opportunities. Like the comedian Rodney Dangerfield who gets no respect, neither does piping insulation.

For example, a ten-foot length of 6” pipe handling 100 psig steam will have a heat loss of 14,100 Btu/hr. This can be reduced to 865 Btu/hr with proper insulation. If the energy cost is $6 per million Btu, the savings would be $600 per year. Insulation of exposed piping can quickly add up to significant savings. Insulation has the added benefit of improving the machine room operating temperature and providing a safer working environment.

The U.S. Department of Energy has free software available called 3E Plus. This software can be used to assess the value of insulation of pipes and tanks. It can be accessed at http://www.energy.gov. Look for the Steam System Tool Suite. There are other useful free tools at this site to help with energy conservation efforts.

*Jeff Chaloux is senior process engineer and Jim Maggard is Systems Development Manager at Kadant Johnson Inc.*
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In 1863, the Jacob Hauer paper mill in Spring Forge, Pennsylvania was put up for sale — a stone paper mill with one 56-inch paper machine, four tenant houses and 101 acres of land. At that time, Philip Henry Glatfelter I worked at the Loucks Hoffman & Company paper mill in nearby Maryland and Mr. Loucks informed Philip of the sale of the mill.

On December 23, 1863, Philip buys the Hauer paper mill for the sum of $14,000. Over the following seven months, Philip's primary objective is to secure an adequate supply white linen rags which would be used as the raw material for papermaking at the mill. On July 2, 1864, the mill goes into operation and begins producing 1500 pounds of newsprint per day.

[Editor’s note: Years later, Spring Forge would change its name to Spring Grove.]

After a number of expansion projects, the mill more than doubles its output to 4000 pounds per day. However, the biggest challenge for Philip is one of logistics — getting the supply of rags to the mill. The nearest railroad is in York, Pennsylvania which is miles away and the only way to get raw materials to the mill was by horse-drawn wagons. With financial assistance from Philip, the railroad a few years later would swing through Spring Grove.

In 1874, Philip earmarks $200,000 to move his old papermaking operation from the iron forge Mr. Howard had converted, to a newly constructed facility with a state-of-the-art paper machine. The new buildings were located just a few hundred yards from the old forge. The new mill increased the company’s production capacity to 10,000 pounds per day.

By 1880, Philip completes the company’s third and most aggressive expansion to-date; installing the world’s largest paper machine, PM 5. Around the time of PM 5’s installation, Philip also invests in new fiber technology that uses caustic soda to separate cellulose wood fibers, eliminating the use of rags which were constantly in short supply. Convinced that wood will be a more sustainable fiber source, Philip invests substantial funds to convert the entire mill to be a user of wood pulp. He then installs another paper machine, which expands the mills’ production to 30,000 pounds per day.

By 1888, the Glatfelter mill is one of the most modern and efficient mills in the industry with production in excess of 100,000 pounds per day. It was at this time that Philip set a new course for the company which would see it go from a producer of paper for newsprint to a manufacturer of high quality fine printing and writing paper for books, envelopes,
lithography and business forms. Philip was well positioned to target book and related printing and writing markets. Years earlier, he had forged relationships some of the largest paper distributors in the region, such as Henry Lindenmeyr, Alling and Cory, Bulkley Dunton, and Bradner Smith, to name a few.

With strong distribution channels in place, Glatfelter marked its first sale of cream book paper in 1890, and the company sold its first envelope paper in 1892. In 1895, with extended education and mill experience under his belt, Philip’s son William led the construction of the first facility for processing both hardwood and softwood pulps. At that time, only hardwoods were used for making paper. Softwoods, such as pine, contained too much sap and were extremely difficult to process. The new technology allowed for the blending of hardwood and softwood fibers for pulp, resulting in paper with improved strength and printability.

NEW CENTURY: CHALLENGES AND CHANGES

William’s son, Philip Glatfelter II, upon graduation from the Hill School in Pennsylvania (about 1910, took employment at the York Manufacturing Co. as a student mechanic before transitioning to the paper company as assistant treasurer.

It was the philosophy of Phil’s father and grandfather that any Glatfelter who aspires to run the company earns their way to the top through hard work. At the same time, the company was officially incorporated as the P.H. Glatfelter Company with capital of $1 million.

On July 4, 1907, Philip Glatfelter I passed away at the age of 70 and William took over as president of the company. During his presidency, the company would see substantial expansion, with output doubled to 100 tons per day and the addition of some of the most advanced papermaking machinery at that time.

As the company headed into the 1920s, William incorporated the Glatfelter Pulpwood Company to ensure an ample supply of wood for the mill. William’s son Philip had served in the military as a lieutenant in the officers reserve corps, and upon his return home after serving 14 months in France, the father and son team would soon embark on more expansion of their company.

During the 1920’s, William and Philip focused on the growing book market. The mill was expanded by 85,000 sq. ft. and installed the largest book paper machine of that time, PM2.

William unexpectedly passed away on Easter Sunday 1930, and the country was entering one of its most difficult financial times. Rather than hunker down and wait things out, Philip boldly invested $2 million in the company’s most aggressive programs to-date — an expansion program that would span the period of the great depression. The investment included a complete retooling of the pulp and paper mill and the construction of a new water dam and reservoir called Lake Layman. The heart of the project would be the installation of a new paper machine, PM1.

MID-CENTURY BOOM

As Glatfelter entered the 1950s it experienced a period of unprecedented growth as the post-World War II economic boom

PM 5, a 100-inch fourdrinier paper machine was installed in 1880 and still operates today.
brought an increase in demand for consumer goods. The company began a number of multi-million dollar expansion projects and Philip Glatfelter II initiated a number of “green” programs to counter the impact capacity increases would place on the surrounding communities’ natural resources. It’s noteworthy to mention that the first tree farms established in Pennsylvania and Maryland and the implementation of a state-wide reforestation program were engineered by Philip II. In fact, he had become so widely respected for his environmental stewardship that President Dwight D. Eisenhower honored him with the Distinguished Service Award.

In 1954, Philip II transferred the presidency of the company to Philip III and the company would see a $12.5 million dollar project that would include a new paper machine (PM7) and a new facility to house the machine. However, the biggest expansion project in the company’s history was yet to come.

On Glatfelter’s 100th anniversary in 1964, plans were announced to invest $40 million in a multi-phase project. Phase 1 would include a massive paper machine to produce book publishing and commercial printing paper, and the newly christened PM8 turned its first reel of high quality paper on April 4, 1965.

Phase 2 of the project included the construction of the P.H. Glatfelter Dam along the Codorus Creek just a few miles south of Spring Grove.

In the third and final phase of the project, Glatfelter built a state-of-the-art secondary waste treatment facility that utilized a technology developed by Glatfelter scientists that not only treated solids, but introduced oxygen back into the water before returning it to the stream.

In 1971, Philip Glatfelter II passed away at the age of 81.

In 1979, Philip III was getting ready to transfer leadership of the company, but before doing so completed the company’s first acquisition — Bergstrom Paper Company, a producer of recycled printing and writing paper with facilities in Neenah, WI and Carrollton, OH.

Following the acquisition of Bergstrom, Tom Norris was tapped to become the first person outside the Glatfelter family to lead the company. As a teenager Norris worked at the company’s Spring Grove mill and earned one of the company’s first college scholarships. Over a 22-year span, Norris served a number of positions within Glatfelter before being appointed president in 1979.

In 1983, Norris took the company public, listing it on the American stock exchange. Norris’ growth plans also included the acquisition of the Ecusta paper mill in North Carolina, which helped open the door to new markets in lightweight paper and doubled the size of the company. Mr. Norris also acquired Schoeller & Hoesch, a global leader in nonwovens and filter papers. With facilities in Germany, France and the
Philippines, this acquisition opened doors to new growth markets in Europe and Asia. During his tenure, Norris successfully led the company to achieving record sales of nearly $600 million annually.

1998-2014: SECULAR CHANGE DRIVES TRANSFORMATION

At the turn of the century, the paper industry began secular change and papermaking capacity started to outstrip demand. With escalating costs and falling prices, George Glatfelter II realized that to survive, the company would need a new approach — one that would take it beyond paper.

Succeeding Norris as president and CEO in 1998, George Glatfelter’s initiative would require a series of acquisitions. With the successful integration of Schoeller & Hoesch complete, George continued to aggressively expand the company’s portfolio into global niche markets with acquisitions in the United Kingdom, East Germany and Canada, propelling the company into absorbent fiber-based materials and establishing Glatfelter as the world’s largest manufacturer of airlaid products.

By 2010, George Glatfelter’s plan to reinvent the company had proved successful, and despite declining consumer demand in the U.S. and a challenging global recession, Glatfelter’s sales had grown from just over $500 million in 1997 to $1.5 billion.

With the company well-positioned to move ahead, in June of 2010, Glatfelter announced an executive succession plan under which George would retire as CEO on December 31, 2010, and Dante C. Parrini, the company’s executive vice president and COO, would be promoted to president and CEO. In the years of working together, the two men had achieved an impressive track record of new product development, driving 50% of company sales from products less than five years old.

Parrini understood the company culture extremely well having worked side by side with George in implementing Glatfelter’s global growth strategy and expanded the company’s global footprint in the nonwovens market with the acquisition of Dresden Papier in Germany, a leading global supplier of nonwoven wallpaper base materials and a major supplier to most of the world’s largest wallpaper manufacturers.

Under Parrini’s leadership, Glatfelter continues to evaluate global growth opportunities and the development of its products.

Today, Glatfelter is an innovative supplier of specialty papers and highly engineered fiber-based materials. The company operates three business units: Specialty Papers, Composite Fibers, and Advanced Airlaid Materials. As history has proven, Glatfelter will surely continue its successful journey for years to come.

Excerpts from, “The Glatfelter Story, 150 Years of Sustainability.” Courtesy of Glatfelter.
Things have changed considerably in the last 30 years. When Austrian technology group ANDRITZ, at the time known as ‘Maschinenfabrik Andritz Aktiengesellschaft,’ first established its central automation department in 1984, the small team had something of a start-up feel, says Gerhard Schiefer, Vice President ANDRITZ AUTOMATION. The company believed that by uniting a handful of experts from its different business areas, which at that time included pulp and paper, hydro and environmental business separation, it could improve the efficiency of the machinery it supplied. And so, Rudolph Neuhold gathered a team of five electrical and automation engineers at ANDRITZ headquarters in Graz with the aim of pooling their knowledge and distributing it throughout the company.

“Like any start-up, things were a little chaotic,” says Schiefer, “but they soon found a growing demand for their services, first within ANDRITZ, and then later on with a number of external customers around the world.”

Neuhold headed the department for its first 29 years, before retiring in early-2013 and handing over to Schiefer. During that time, ANDRITZ AUTOMATION has grown from a small office in Graz to a global network of 2,044 experts across 109 locations offering a broad spectrum of services that contributes approximately 8% of the group’s order intake. The global team now provides automation solutions and tools across a wide range of industries, from pulp and paper to hydro, metals including automotive, separation and feed mill technology. Automation for pulp and paper plant machinery has been part of its core services since the very beginning and there are now more than 280 employees working exclusively in this sector across several main locations, including Austria, Finland, the United States, Brazil, Germany and China.

Development in Stages

As a member of the ANDRITZ AUTOMATION team for 25 years, Schiefer has observed first-hand the many changes it has undergone. “The development of the ANDRITZ AUTOMATION Group can be roughly divided into three sections — one for each decade. During the first 10 years, our focus was on automation of our own machines, predominantly at sites in and around Austria. In the second decade, we started to expand this to include the automation of entire factories and production plants on a more international scale, initially in South America, but then also across Asia. The last 10 years have seen us evolve this service still further to offer complete turnkey solutions to a growing number of external customers around the world.”

Schiefer pinpoints the automation of a large pulp factory in Santa Fe, Chile, in 2004 as an important milestone in the company’s pulp and paper automation history. “It was the first major turnkey project that we carried out for one client. Until then, other companies knew the ANDRITZ name, but they didn’t know anything about our automation expertise.”

The development of ANDRITZ AUTOMATION during the last 30 years has been a mixture of organic and inorganic growth. Some of the group’s acquisitions have helped to expand the expertise offered by its automation team, with Schiefer naming the 2006 addition of VA Tech Hydro in 2006 and Schuler in 2012 as important examples. “This helped bring decades of electrical know-how into the team.”
Global Network

Today, the 109 ANDRITZ AUTOMATION locations around the world form a virtual network of “satellites,” as Schiefer calls them. Each satellite can operate both independently or as part of a cluster for specific projects. “Our offices have all been established in an existing ANDRITZ sales or manufacturing location, which helps them integrate with the group. The automation services offered by each one depend on what the customers in the area require. While most customers come to us because of our global reputation, they also appreciate the fact that we have a local presence with local employees in many different locations.” To ensure that this global team can deliver consistently high results and collaborate effectively, the company uses several virtual engineering tools and databases to collate and process information, from technical requirements to instrumentation diagrams.

There are two aspects that mark ANDRITZ AUTOMATION as unique on today’s market, says Schiefer. “Our core focus as a plant and equipment supplier means that we know the engineering and operating processes intimately, which helps to bridge the gap between project planning and operations.” The second factor is platform-independence. “We don’t deliver our own products; what we do is take existing soft- and hardware and tailor it according to a customer’s requirements. It’s like taking someone else’s grapes and making your own wine. This means that we can always offer the best possible solution as we aren’t tied to one specific supplier.”

For ANDRITZ, though, these solutions are now much more than just installing automation equipment and leaving the customer to it, as was more common in the past. Full lifecycle management, from the planning phase through to ongoing service and maintenance, is becoming increasingly important for plant operators whose capacity and resources are better used elsewhere. Web-based technology is playing its part here, too: greater interconnectivity and system intelligence enables ANDRITZ to monitor systems remotely and identify issues quicker and easier.

The Future

And what of the next 30 years? In the pulp and paper market, the trend is clear, says Schiefer, with paper plants shifting their focus from fine to packing paper. Rather than new builds, upgrades and refurbishments of existing plants to improve efficiency and performance, particularly in developed markets, will capture a significant amount of focus for the ANDRITZ AUTOMATION team. But while many things change, some remain the same.

“Our key business principles are very much as they were in 1984 — keeping an eye on the future, staying flexible, concentrating on our core competence and listening to what customers need,” Schiefer explains. “If we remember that, then we will continue to be successful for the next 30 years.”

Gerhard Schiefer, Vice President ANDRITZ AUTOMATION, can be contacted by email at: gerhard.schiefer@andritz.com, or to learn more about ANDRITZ AUTOMATION, please visit: www.andritz.com/automation.
U.S. paper industry has been a challenging place to do business in the past few decades. Of the nearly 800 mills operating in 1970, only 345 are still operating today. Demand for certain paper grades has been in secular decline for well over a decade and Monadnock Paper Mills’ home state of New Hampshire has not been immune, with a slew of mills in the region shutting down in recent years.

Yet, Monadnock Paper Mills has managed to survive and even thrive for nearly 200 years, and a big reason the company is able to do so has been its ability to proactively adjust and change with the times.

Monadnock — a family-owned company with 180 employees — has continually developed new products and improved production efficiencies. The company has also adopted numerous sustainability practices that not only benefit the world around it, but advanced the company itself.

Monadnock Paper Mills, Inc. is nestled along the Contoocook River in the 1,400-person town of Bennington, New Hampshire and has been in continuous operation since 1819 — the longest of any paper mill in the United States. Today it provides printers and designers with papers for annual reports, brochures, direct mail, corporate identity, desktop publishing, and corporate communications of all kinds.

In addition to its premium-branded lines, Monadnock manufactures specialty printing papers for applications such as fine art prints and conservation. Furthermore, the
Monadnock Paper Mills produces technical/specialty and converting products for a wide range of uses, including high internal-bond abrasive backing; tape system components; durable book coverings; controlled porosity, sterilizable medical packaging; high porosity vacuum filter media; and latex-treated, aqueous-emulsion-coated, strippable wallcovering.

Monadnock is the largest employer within a 12-mile radius, and it intends to keep it that way through smart management, the ability to stay ahead of the curve, and an emphasis on efficient and sustainable practices. Monadnock understands that the community depends on it, which is a responsibility the company does not take lightly. This loyalty, coupled with wise investments and calculated risk-taking, has allowed Monadnock to remain profitable across three centuries.

**THE EARLY YEARS**

Joseph Putnam was the first of many New Englanders who established businesses near the Great Falls of the Contoocook River in 1782. Putnam bought 100 acres of land for £85 and built a grist and sawmill at the falls. As new settlers arrived and set up small industries, the mill became the center of a thriving village known as Putnam's Mills. Putnam and family members operated the mill until 1819, when Moody Butler acquired it. Although the main business of the mill had been to grind corn and saw logs, Butler saw the possibility for another use, namely, the making of paper. The main ingredients for this venture were readily available — an abundant supply of flax from neighboring farms, and pure mountain water from the Contoocook River.

Because the supply of British-made paper had been cut off since the Revolution, American-made paper was in great demand in the United States. And during the War of 1812, Great Britain’s embargo on British goods made paper an even scarcer commodity. The people in the area decided they needed an indigenous source of paper, and handmade paper became a thriving industry at Putnam’s Mills.

Colonel Arthur J. Pierce, brother of the 14th President of the United States, Franklin Pierce, came to Bennington in 1900 and became the mill’s sole owner. He constructed a new brick building, which today still houses the systems for stock preparations, and two fourdrinier papermaking machines. He installed every available new improvement for manufacturing paper, continued the production of writing and book papers, and expanded the range of bond and ledger papers.

Under the guidance of Colonel Pierce, Monadnock Paper Mills reached its heyday in the 1920s. It was during that decade when American paper products boomed as much as the national economy was surging. Everyone needed paper during the Roaring Twenties, from adding machine tape and ticker tape, to fine and fancy letterhead. This added up to high sales and good profits for paper companies, including Monadnock.

**DECLINE AND RENEWAL**

The Great Depression of the 1930s, the 1938 flood, the near impossibility of obtaining equipment and replacement parts during World War II, and the Colonel’s failing health, reduced Monadnock’s operating efficiency and profitability from about 1933 to the time of Colonel Pierce’s death in 1948. In the absence of heirs, Gilbert Verney, a textile worker, bought Monadnock and altered the course of the
monadnock paper mills


paper mill by modernizing its equipment to include the most up-to-date, automated machinery. Among his first endeavors, Verney brought a second papermaking machine back into use after years of being idle, allowing the full-time operation to compete in the post-war paper market. He also transferred Monadnock’s power plant from coal to oil, incorporated steam turbines and reels and winders. He began to invest in strong marketing to drum up business — a strategy that paid off when Taiwan, newly exiled from mainland China, commissioned Monadnock Paper Mills to print its new currency.

THE SHIFT TO SPECIALTY PRODUCTS

As consumer demand boomed through the 1950s and into the 60s, the paper industry’s ability to produce paper followed suit, and more and more paper produced on bigger and faster machines flooded the market.

“In the late 1960s, my father said there were going to be some really great printing papers made on wide, fast machines, and we wouldn’t be able to compete, so we’d better get into the specialty paper business. The problem was, no one knew what that meant,” says Richard Verney, the current Chairman and CEO of Monadnock Paper Mills.

Verney remained acutely aware that the survival of the mill depended on further specialization and the development of greater technical expertise to serve special segments of the market. At first, “specialty paper” came in the form of sterilizable medical paper for packaging medical devices, and paper to form vacuum cleaner bags. After three years of research and development, Monadnock created a vacuum cleaner bag paper that outperformed other products at the time, and made their first commercial product for companies like Electrolux and Hoover. Eventually, most production moved to China, where 98 percent of vacuum cleaner bags are made today. Even though this trend was only a passing success for Monadnock, the move to specialty products was ultimately a good one. Verney’s never-ending pursuit of excellence for 30 years made Monadnock Paper Mills one of the best specialty paper mills in the country.

During the 1970s and 80s, when some U.S. paper companies began low-cost ventures overseas, Monadnock refocused on niche paper goods, such as technical paper and premium-quality printing papers. The company continued to diversify their product mix with help from a creative, motivated and talented workforce. “If we were dependent on our printing paper business alone today, we’d be out of business,” says Verney.

FOCUS ON SUSTAINABILITY

One of the strategies that has served Monadnock well in a tough paper market is disruptive innovation. For example, with the U.S.’s concern about the amount of waste headed to landfills, one of Monadnock’s most popular products is a 100 percent post-consumer waste recycled high quality printing paper, which is also testament to Monadnock’s belief in the value of recycling along with the company’s dedication to environmental stewardship. In addition, Monadnock has developed a new line of plastic replacement products, such as a paper-based gift card that replaces plastic. Several
hundred million of these gift cards are in the market today.

On the natural resources front, Monadnock has been recognized for its efforts to prevent pollution of the Contoocook River and works consistently to ensure that the water that enters the river is clean for all. “We believe that if you’re going to live and operate in a small community, you ought to take care of it,” Verney emphasizes. The mill uses around 600,000 gallons of water per day pumped from an aquifer, then releases most of it as treated water into the river.

Monadnock operates its own water treatment plant to process water that is used in papermaking. Initially, the solids, known as short fiber paper, must be separated from the water. This short paper fiber is the largest byproduct of the treatment facility. The clarifier in the treatment plant separates out the fibers. Historically this “waste” was sent to a landfill, but not any longer. In a solution that epitomizes the facility/community/environment connection, Monadnock has teamed up with New Hampshire farmers and reclamation teams to put the material to good use. Farmers use the nitrogen-rich product to hold seeds in place in their fields and also for animal bedding, while others use it for gravel pit and landfill reclamation projects.

Monadnock produces up to 50 percent of its electrical requirements through on-site hydro-electric generation.

Operating five turbines in facilities along the Contoocook River, the balance of purchased electricity is offset through investments in Green-e certified renewable wind-power energy certificates.

The company also made the decision to implement an ISO 14001 certified environmental management system in 2004, something that no other paper company of its size had done. ISO 14001 is an international series of standards related to environmental management and continuous improvement, supported by independent third-party audits. Last but not least, Monadnock invests in carbon emission reduction projects through the purchase of verified emission reductions to offset 100 percent of its CO2 equivalent emissions.

THE FUTURE OF MONADNOCK

In almost 200 years of continuous papermaking in one location, Monadnock Paper Mills has relied on its ability to change with the times. The company has persisted against the odds, while many other paper manufacturers in New Hampshire have come and gone.

“I think the future will be challenging, I don’t deny that. We’re a small guy in a big industry,” says Verney.

Fortunately for Monadnock, its papermaking operation is well established in a market that’s consolidating.

“I don’t think it’s necessarily easy being a manufacturer of anything in the United States today. There’s too much global competition,” Verney notes. “But I do think that if you try to stick to something that’s relatively specialized, limit the number of competitors you have, and make a quality product consistently, there’s a place for you. It’s nothing but traditional hard work and having good people who work with you.”

Lisa Berghaus is manager of marketing communications at Monadnock Paper Mills, Bennington, N.H.
Throughout the latter half of the 1600s, commerce within America’s colonies was growing and the demand for paper heightened. But obtaining paper was a major problem for colonial printers due to the fact that all paper was imported from England — until 1691. In that year, William Rittenhouse and his son Nicholas (or Claus, as it was then spelled) produced the first paper in the American colonies.

Rittenhouse was born in Germany, near the Dutch border. His name then was 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 where he learned the Dutch methods of fine papermaking.

In 1688, Rittenhouse left Holland and settled in Philadelphia, Pennsylvania near the print shop of William Bradford. Bradford (1663-1752), an English Quaker, had established the first printing press in Pennsylvania in 1685 and within a few years his business was thriving.

With his knowledge of papermaking and the steady demand for paper being generated by Bradford’s printing business, Rittenhouse on September 29, 1690, leased a twenty-acre lot on Monoshone Creek near Germantown, which is now Philadelphia, and formed a company with several prominent Philadelphia residents – one of them being Bradford – to erect a paper mill. On that day, William Rittenhouse and his son Claus began their careers as papermakers and business owners in America.

According to a number of historical accounts, the first mill was constructed of logs and housed a waterwheel positioned over the creek. However, a flood destroyed the mill in 1701 and another stronger mill built of stone was erected next to the spot where the first mill had stood.

According to an account of the mill’s destruction, William Barton, the biographer of David Rittenhouse, William Rittenhouse’s great-grandson and a well-known scientist, wrote a memorandum written by William Penn stated that the Rittenhouses had “sustained a very great loss by a violent and sudden flood, which carried away the said mill with a considerable quantity of paper, materials and tools, with other things therein, whereby they were reduced to great distress; and, therefore, recommending to such persons as should be disposed to lend them aid, to give the sufferers ‘relief and encouragement, in their needful and commendable employment,’ as they were ‘desirous to set up the paper-mill again.’”

Penn, the founder of Pennsylvania, was very proud of the Rittenhouse Mill and by all accounts considered Rittenhouse’s business a great asset to the colony. With Penn’s assistance and support, a stronger mill was built in its place.

Prior to the establishment of Rittenhouse Mill, all paper
writtenhouse paper mill

was imported from Europe and taxed accordingly. The new mill provided a local source of printing, writing, and wrapping paper, as well as pasteboard.

In 1706, Rittenhouse bought out the other partners and became sole proprietor of Rittenhouse Paper Mill. He, and later his son, Claus, trained and developed a capable workforce to produce products of increasing quality. This eventually led to starting up additional mills in Pennsylvania.

William Rittenhouse died in 1708 and left the paper mill to his son Claus. The business prospered at the site and was operated by six generations of family descendants. For twenty years, Rittenhouse Paper Mill was the only paper mill in the Colonies. In 1710, William Dewees, who was married to Claus Rittenhouse’s sister, built a mill nearby in Chestnut Hill, having learned the trade at Rittenhouse Paper Mill.

EARLY PAPERMAKING

Early papermaking was a laborious process. First, clean cotton and linen rags had to be collected. Men called “ragpickers” went from house to house, asking for rags, which they then sold to the mills. Newspapers also ran ads requesting that people bring in their old rags, which the newspaper sold to the mills, who in turn granted a discount to the newspaper publisher for his next purchase of paper. Three men working very hard were fortunate to produce a thousand sheets a day. Pulp was beaten using a huge trip hammer, known as a stamper beater, which was lifted by the mill’s water wheel. Sometimes flax was used, but mostly linen rags were recycled for printing and writing paper.

Of the three major jobs in the mill, including the Coucher and the Layer, the Vatman was the real artisan. He would dip his mould, a framed wire screen, into a vat of liquid pulp or “stuff” and lift out a layer of fibers that would become a sheet of paper. The layer of fibers was laid between felts and then placed on a press. After the water was squeezed out, the paper was hung over ropes to dry.

The quality of the paper largely depended on the quality of the linen used to make the pulp. Watermarks were produced by working a certain wire pattern into the molds; Rittenhouse watermarks produced in the early years of the business variably include the initials WR (for William Rittenhouse), NR, or KR (for Nicholas or Klaus Rittenhouse). As a lasting testimony to Rittenhouse’s contribution to print culture and the larger social and cultural development of early America, some of the most important original documents of the British colonies bear the Rittenhouse watermark.

The establishment of paper mills in America created political tensions with Great Britain. While the colonists wanted to manufacture their own paper and cloth, English merchants who exported these commodities saw a lucrative market about to dry up. To protect its merchants, England continued to limit these industries in America, which irritated the colonists. Some of the Stamp Acts, which further angered the colonists and helped lead to the Revolutionary War, involved a special tax on imported paper. When the Revolutionary War broke out, imports of paper and cloth were banned.

References.
The Continuously Evolving Specialty Papers Market

By Dr. Graham Moore

Specialty papers serve a wide and diverse range of end uses, many of which have continued to develop and grow, providing many market opportunities for the paper industry. With the declines in graphic markets, the specialty sector has become an area of increasing interest for paper companies whose graphic products are experiencing slumps in demand.

According to Smithers Pira’s most recent report on the specialty paper industry, The Future of Specialty Paper Markets to 2018, the global end use market in 2013 was dominated by packaging related applications. For example, flexible packaging, labels and printing related applications, such as inkjet papers and thermal papers. A wide range of other specific applications constituted the other key categories.

A Shift in Decline and Expansion

In some markets, the pattern is for a general decline in a particular segment. For example, book printing; perhaps due to an increase in internet-based and electronic readers, and paper filters, which are losing share to polyester filters in automotive applications.

In contrast, some segments have benefitted from changes in retail and manufacturing technology which have improved their prospects. Labels and release liners are now increasingly necessary; coffee and tea bags have been expanding their share, replacing traditional loose-fill; and the emphasis on reducing air pollution has increased demand for industrial filtration.

In some areas, such as electrical applications, specialty papers are used in infrastructure. Therefore consumption is clearly higher in the developing world and stagnant in the developed world. Similarly, security papers, currency and check paper, and postage stamp paper are growing in emerging areas but remain static in more developed ones. The use of specific specialty papers is universal in other segments, so gift-wrap papers, glassine and crepe papers have buoyant consumption levels in all markets.

Continuous Market Growth Is Not Assured

The diverse nature of the specialty paper industry is reflected in the variations of growth rates observed for different end use products. Specialty paper is misleadingly synonymous with the ability to generate high growth rates. While some grades perform well with sustained annual growth rates, this may be due to a switch in technology favoring this grade. The reality is that many specialty paper grades have a shorter production lifespan than commodity papers, and this is to be expected where specialty grades are developed in conjunction with evolving technologies. Many grades which once showed high growth are now almost extinct, including dielectric coated, thermal fax paper, tabulating cards and carbon paper.

In some cases, the growth of specialty paper is related to fashion trends, such as wallpapers, others are influenced by changes in health concerns (cigarette papers, filtration); and others by changes in economic development (filtration grades introduced where no filtration existed before building and construction grades).

The Impact of Mergers and Acquisitions

In production terms, Europe accounted for almost half of all production in 2013 with North America and Asia generating most of the remainder. With the diversity of products, no paper supplier has greater than 5% share of the specialty paper market. In addition, the specialty sector, although thriving in many end use markets, has not been immune from the commercial and economic factors affecting the paper sector as a whole.

Mergers, acquisitions and the development of operational alliances have grown in number, for example, the formation of Expera Specialty Solutions through a merger of Wausau Specialty Paper and Thilmany. The combination of these mergers and other players looking to enter the arena is making the space more competitive for all.

How Can Paper Mills Survive?

For mills to survive in this increasingly competitive market, the future has to lie in retaining a premium image, maintaining flexible production and cultivating strong relationships with converters who have most direct contact with end users.

Additionally, product development has to be continuous to ensure products meet the ever-demanding needs of a diverse customer base. The part of third party technology providers will increase to enable paper products to evolve and compete more effectively with alternative materials and substrates.

Dr. Graham Moore is Senior Consultant – Paper for Smithers Pira.
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Imagine someone proposing a government policy that limited the ability of almost 36 million U.S. households to access government benefits and services.

Now imagine if the households affected by this policy were the ones most in need of the benefits and services.

While I don’t believe the government is proposing to purposefully limit access to its services, government policies are being implemented doing just that.

**Rush to Digitize**

Policies that phase out or eliminate paper-based options for government services in favor of digital-only access are leaving tens of millions Americans behind. This “rush to digitize” simply doesn’t work. Citizens need more than one option to access government information and services.

While news and entertainment are dominated by digital, not everyone is online. The number of Americans without regular access to the Internet is staggering.

Nearly 36 million American households do not have Internet access at home.

Almost 19 million senior citizens don’t own a computer.

These are enormous numbers of Americans for whom digital-only access to government services and information is a huge barrier. Yet these figures don’t even tell the full story of the impact of digital-only access. If you dig deeper, the figures show that those most impacted by digital-only options are those most in need of government services.

Four out of 10 American adults who have not graduated from high school are offline.

One in five rural residents is also offline.

A quarter of Americans earning less than $30,000 per year are offline too.

For these Americans, anything that requires digital access to register for information is out of reach.

Another unintended but very real consequence of the “rush to digitize” is the cost. Identity theft targeting online government transactions is costing U.S. taxpayers billions of dollars. In just one example, the Government Accountability Office (GAO) found that identity theft due to electronic filing of tax returns had exploded by 480 percent since 2008. In one year alone – 2010 – GAO estimated the fraudulent tax returns to have cost $5.2 billion.

**People Should Have a Choice**

Digital access to government services and benefits can be an effective tool, and people should have the choice to use it. But policies that totally eliminate paper options eliminate that choice.

Fortunately, there are bipartisan efforts underway on Capitol Hill to ensure that millions of Americans aren’t totally left on the wrong side of a digital divide between them and their government.

Earlier this year and at the request of Congress, the Social Security Administration agreed to resume periodic mailing of earnings statements to workers.

Reps. Sean Duffy (R-Wis.) and Mike Michaud (D-Maine) have co-sponsored House Resolution 97 that calls on federal agencies to ensure taxpayers have the option to receive important information and communications in a paper format. This bill would be an important step in securing the right to choose between paper and digital for all Americans.

Another bill – House Resolution 3385 by Rep. Matt Cartwright (D-Pa.) – would preserve the Treasury Department’s Tax-Time Savings Bond program, retaining the option to choose between paper and electronic savings bonds. This would give comfort to those bond buyers who don’t want to risk losing any record of their investment. And in July, the GAO also agreed – at the urging of Reps. Ribble (R-Wis.), Michaud (D-Maine), and Cartwright (D-Pa.) and Sen. Susan Collins (R-Maine) – to review how a lack of paper savings bond availability affects low-to-middle income individuals.

Americans deserve unfettered access to government information, services and benefits. Firmly establishing their right to choose between paper and digital formats is critical to maintaining that access. Millions of Americans still depend on that choice.
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