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It’s easy, accurate, and automated.

Learn more. Contact your Buckman representative or visit buckman.com for details or to start a trial.
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The war on plastic is now officially being fueled by star power. New England Patriots quarterback and five-time Super Bowl champion Tom Brady is telling people to say ‘no’ to the use of plastic straws. In my opinion, and being from the Boston area, I’d rather have Tom more focused on firing a football downfield to Rob Gronkowski than getting involved with an environmental problem he has not studied nearly as much as he has the Patriots’ playbook.

Brady launched an Instagram video recognizing World Environment Day by saying “it’s time to team up and beat plastic pollution. There’s an easy step that every one of us can take to tackle this big issue right away. No more single-use plastic straws. The effect of these little guys are posing a huge health risk to our planet. And one of the solutions that we’re proposing is very simple; next time you see a plastic straw like this (holding up plastic straws) just say no.”

It’s great that Tom cares about the environment, but his message about plastic straws posing “a huge health risk to our planet” is way off the mark — plastic straws are a fraction of the problem. Further, his star power will surely create leverage for a handful of self-serving politicians to push for bans on the use of plastic straws in random towns and cities in the U.S. — bans that would accomplish nothing in environmental terms.

According to an article written by Christian Britschgi, an assistant editor at Reason magazine, plastic straws make up a very small amount of plastic waste in oceans. From coastal cleanups in Canada, California, and the U.K., plastic straws make up 2 to 4 percent of beach litter by item, says Britschgi.

“Even if plastic straws were 100 percent of our plastic waste, banning them [in the U.S.], or in most any rich country, would do almost nothing to help the environment. That’s because, as best we can tell, the vast majority of plastic waste entering the ocean comes from the poorer nations of the world, particularly in East Asia,” Britschgi explains.

“China alone accounts for about 28 percent of plastic pollution. Indonesia contributes another 10 percent. For the Philippines and Vietnam, it’s about 6 percent each. The United States, by comparison, is responsible for less than 1 percent of global plastic marine waste. Roughly 2 percent comes from the European Union (including the U.K.),” Britschgi added.

I don’t want to be negative and shoot down Tom’s message. The campaign has to start somewhere and he got the ball rolling. So let’s approach this as an opportunity for the paper industry to prepare a rebuttal and publicize its research and development of fiber-based straws as an alternative to plastic. Tetra Pak, for one, recently announced that they are working on a new paper-based straw to be used with their small drinks cartons.

To really get the anti-plastic straw campaign started, and at the risk of wreaking even more havoc than what’s already taken place within the Patriots during the off-season, Tom should sit down with his employer, Robert Kraft, the owner of the New England Patriots and Gillette Stadium, and also Chairman and CEO of Rand-Whitney Group, a paper and packaging company based in Worcester, Mass., and convince Mr. Kraft to stock concession stands at Gillette with only paper-based straws for all of its events sometime in the near future. We could call it “The Last Straw” campaign — plastic straw that is.
Voith Paper Webshop

On the Voith Paper Webshop, customers can find and order spares for their installations, via user-friendly search and navigation functions. Registered users can see their machine-specific information concerning their orders at a glance. Find more information on our website.

voith.com/voith-paper-webshop
Twin Rivers Paper Company LLC in early-April entered into a definitive agreement to acquire the paper mill located in Pine Bluff, Arkansas owned by Mondi Group.

The Pine Bluff mill produces multiwall, converting and grocery bag grade unbleached kraft papers serving a variety of food, agricultural, and industrial applications. With basis weights between 40# and 78#, the mill has a capacity in excess of 140,000 US short tons per year.

“The addition of the Pine Bluff mill is consistent with the evolution of our company and fully complements our overall mill system, product offerings and strategic direction,” said Bob Snyder, CEO of Twin Rivers.

Mondi acquired the kraft paper mill and bag plant from Graphic Packaging in July of 2014 in a $105 million deal that included the Pine Bluff mill and nine bags plants across the US.

Clemens Willee, CEO Packaging Paper, Mondi Group, said, “We believe that the interests of the mill and its employees are better served by the new owners where there is a closer long-term strategic alignment.”

Twin Rivers expects to complete the deal in the second quarter.

Greif announced plans to expand its CorrChoice sheet feeder network with the addition of a new facility. The new facility, which will operate a corrugator and a litho-laminator line, will be located in the Mid-Atlantic region, offering easy access to several of Greif’s key markets and is expected to enhance transportation efficiencies for both of Greif’s paper mills.

“This investment enables Greif to continue our growth with existing strategic customers while providing more responsive service on a broader range of products,” said Tim Bergwall, Group President, Paper Packaging & Services. “This latest CorrChoice expansion better positions us to provide comprehensive supply of containerboard, sheets, and specialty products to corrugated converters.”

The new operation is expected to employ 80 people and will be sized similarly to existing CorrChoice locations.
NSK rolling bearings are designed to support the operating and productivity challenges of papermaking machines. Equal to the demands for increasingly high speed and high load carrying capacities, NSK also offers specialized solutions like our TL spherical roller bearings to contend with prevailing high heat and contamination - delivering utmost performance, bearing life, and paper machine output.

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Mohawk Fine Papers Acquires Crane Stationery

Mohawk Fine Papers, Inc., in early-April purchased Crane Stationery Corporation of North Adams, Massachusetts for an undisclosed amount. This acquisition includes all three premium Crane brands: Crane & Co., William Arthur and Vera Wang.

Founded in 1801, Crane has been synonymous with luxurious cotton papers and the finest personalized stationery in the world.

“The Crane name and reputation has withstood the test of time for more than 200 years and we are very excited to add this legendary paper and stationery brand to our family portfolio,” said Tom O’Connor, Mohawk Chairman and CEO.

The combined companies will expand Mohawk’s product offering to include Crane’s extensive, iconic line of boxed stationery, wedding invitations, holiday cards and other personalized products, as well as Crane Crest, Crane Bond and Crane Lettra.

Mohawk and Crane will maintain their respective existing brand names and continue to offer their unique portfolios and offerings, while at the same time expanding products, offerings and channels.

Mohawk has assigned Paul Biesiadecki to oversee the Crane Business and facilitate the transition to Mohawk. Dean Daigle will be responsible for all Crane operations including Finance, HR, and IT, and Bart Robinson will lead the Sales and Marketing teams.

All Crane employees with the exception of the three owners will join the Mohawk team.

Conlog Starts-up Fibria’s New Pulp Terminal at Port of Santos

In March, Conlog (Concórdia Logística) started port operations at Terminal 32 (T32) located in the Macuco area of the Port of Santos in the state of São Paulo, Brazil. Handling primarily pulp, paper and general cargo, T32 was leased by Brazilian market pulp producer Fibria.

The term of Fibria’s concession contract for the area is 25 years.

Conlog is responsible for unloading pulp from trains, transporting it to warehouses, inventory management, internal warehouse movements, placement alongside ship and loading.

Conlog also is responsible for Fibria’s port operations at Terminals 13, 14 and 15 in the Outeirinhos area. “The fact that we have been working for Fibria for three years at the Port of Santos and that this new operation expands the scope of our activities confirms our high performance in terms of both productivity and safety initiatives,” said André Stern, Commercial Director of Conlog.

The area of Terminal 32 has a 33,400-sq.meter warehouse with the capacity to store 40,000 tons of pulp and total annual pulp shipping capacity of 1.8 million tons. The terminal is part of the logistics solution for transporting production from Fibria’s second pulp mill in Três Lagoas, Mato Grosso do Sul, which started operations in August 2017.

Fibria’s logistics structure includes the Intermodal Terminal in Aparecida do Taboado, Mato Grosso do Sul, from where the output of the Três Lagoas pulp mill is shipped directly to the Port of Santos.

Fibria’s new pulp production line at Três Lagoas has an annual production capacity of 1.95 million tons of eucalyptus pulp. Combined with the mill’s existing production unit, Três Lagoas has a total production capacity of 3.25 million tons per year. Considering all of its units, Fibria’s annual pulp production capacity amounts to 7.25 million tons.

Ahlstrom-Munksjö to Acquire Caieiras Specialty Paper Mill in Brazil

Ahlstrom-Munksjö has agreed to acquire MD Papéis’ Caieiras specialty paper mill in Brazil from Formitex Group, an industrial conglomerate active in the paper, chemicals and panel board industries.

According to Ahlstrom-Munksjö, annual net sales of the business to be acquired are approximately EUR 80 million and comparable EBITDA approximately EUR 13 million in 2017. The debt free purchase price is approximately EUR 100 million. Annual synergy benefits of up to EUR 6 million are estimated, mainly arising from optimization of overlapping business.

“The Caieiras business is an excellent addition to our global platform, and drives our ambition to maintain a leading position in selected niches of the global fiber-based solutions market that offers growth. We have plentiful of opportunities to grow in our existing business segments, proceed with new product development and consider growth in adjacent segments,” said Hans Sohlström, President and CEO of Ahlstrom-Munksjö Oyj.

Formitex Group noted that the sale of the specialty paper mill is in line with its strategic interest in focusing on its core chemicals businesses.

The Caieiras mill is located in the vicinity of Ahlstrom-Munksjö’s existing production plants in Jacareí, part of the Industrial Solutions business area, and in Louveira, part of the Filtration and Performance business area.

Ahlstrom-Munksjö expects to complete the deal during the third quarter of 2018.
As a new member of the IBS Paper Performance Group, PMS can now supply our patented Ruby Nozzle and edge trimming systems globally with the support and service of the IBS network of companies to create even more value for our customers.
EUROPE

UPM to Convert PM2 at Nordland Mill to Glassine Paper Production

UPM will invest EUR 116 million to rebuild paper machine 2 (PM2) at its Nordland mill in Dörpen, Germany and convert it from fine paper to glassine paper production. The machine will also be equipped with new finishing equipment.

The planned capacity after the rebuild will be 110,000 tonnes per year.

UPM said the decision to convert the machine’s production is the result of the company’s continued growth in the release liner markets and a forecast of strong specialty paper demand for labelling, packaging and e-commerce as well as in medical and hygiene applications.

The production of woodfree papers on PM2 in Nordland will continue until the third quarter of 2019 and the machine will be producing both glassine and woodfree paper during the ramp-up phase. PM2 will begin producing glassine paper as of the fourth quarter of 2019, UPM noted.

UPM Changshu

UPM has also decided to further increase the release liner base paper capacity at UPM Changshu mill in China. Since the successful startup of the paper machine 3 in Changshu, UPM has established a strong position in the label paper segment in Asia. By installing a second supercalender on paper machine 3, there will be an additional capacity of more than 40,000 tons of glassine paper per year as of the first quarter of 2020. The total investment in Changshu is EUR 33 million.

LEIPA Starts-up Rebuilt White Top Testliner Machine in Germany

LEIPA recently started-up rebuilt paper machine, PM 5 at its paper mill in Schwedt, Germany. PM 5 produced its first ‘paper on reel’ on March 31 and has the capacity to produce 450,000 metric tons per year of white top testliner.

LEIPA Group CEO Peter Probst, commented, “We look forward to growing successfully with our customers and partners. The demand for white top liner remains consistently high and the trend is rising. Prices are at a high level as well. These factors result in excellent conditions for the market launch of the PM 5.”

Prior to the rebuild, PM 5 operated as PM 11 and was producing 280,000 metric tons of newsprint annually.

Voith conducted the turnkey machine rebuild project, which included a new OCC stock preparation and an extension of the DIP facility at the Schwedt mill.

Smurfit Kappa Completes Upgrade of Its Facture Paper Mill in France

Smurfit Kappa recently completed an upgrade of its Facture Paper Mill in South West France following a three-week shutdown. The upgrade project included the implementation of a new pulp washing line and a complete overhaul of the black liquor recovery boiler.

Smurfit Kappa also said it has plans for a series of improvements to the paper machine No. 5, which will begin in 2019. Upon completion of these improvements, the No. 5 paper machine’s production capacity of white top kraftliner will increase from 174,000 tonnes per year to 220,000 tonnes per year. The project will also enhance the quality of the machine’s premium product.

UPM Paper ENA Renamed UPM Communication Papers

UPM has renamed UPM ENA (Europe and North America) business area as UPM Communication Papers. The name change took effect on April 26.

“The new name underlines the industry focus and global reach of the business area,” UPM explained. “It further highlights UPM’s long-term commitment to sustaining its global graphic paper business, building on the view that paper will continue to be an important part of the media mix in the publishing industries and business communication.”
SOUTH AFRICA

Twinsaver Group Starts-up New Tissue Machine at Kliprivier Mill

Twinsvaer Group on March 28 started up a new tissue machine at its Kliprivier Mill in Gauteng, South Africa. The machine was supplied by Toscotec.

The new machine, PM5, has a width of 2.75 meters and a design speed of 2,000 m/min. The new production line produces premium-quality super-soft toilet tissue and has a production capacity of over 30,000 tons per year.

According to Toscotec, the scope of supply for the turnkey project included the stock preparation system, the AHEAD-2.0S tissue line, the electrification and control systems, the complete plant engineering, erection, and supervision for erection, commissioning, training and start-up.

Twinsaver Group is the largest South African manufacturer, marketer and distributor of branded tissue products. The product range includes toilet tissue, facial tissues, roller towels, house and leisure and away from home products. Twinsaver Group’s head-office is located in Bryanston, South Africa, with manufacturing and converting facilities in Kliprivier, Pretoria, and Cape Town.

MIDDLE EAST

Mondi to Acquire Industrial Bag Producer NPP in Egypt

Mondi has signed an agreement to acquire 100% of the outstanding shares in National Company for Paper Products and Import & Export S.A.E (“NPP”) for a total consideration of EUR 23.7 million on a debt and cash free-basis.

NPP is a privately owned industrial bags producer, operating one plant in Giza near Cairo, Egypt, serving mostly regional customers. In 2017 NPP generated revenues of EGP 577 million (EUR 29 million).

Mondi is the leading industrial bags producer in the Middle East, operating four plants in the region.

Commenting on the acquisition, Erik Bouts, CEO Fibre Packaging, Mondi Group, said, “The acquisition of NPP complements our network of plants in the growing Middle East region and provides us with a leading position in Egypt to grow our business and better serve our customers.”

Mondi expects to complete the deal during the first half of 2018.

INNOVATION

UPM Launches New Biocomposite Material for 3D Printing

UPM has launched Formi 3D, a new type of biocomposite that has been specially developed for 3D printing, bringing together advanced cellulose fibre and biopolymer technologies.

With a matte finish and a surface that feels natural to the touch, filaments for 3D printing can be produced in light colours as well as dark. The new material has been engineered to flow smoothly through small nozzles enabling fine details. At the same time, UPM Formi 3D’s fast cooling and low shrinkage ensures improved dimensional stability and makes it the ideal material for large scale printing.

UPM Formi 3D’s self-supporting molten stage properties enable round or other complex shapes to be produced without a separate support material. Wood-like post processing of prints is another benefit of the new biocomposite: fine sanding, reduced paint absorption and easy to glue with PVAC.

UPM Formi 3D is produced and sold in granule form to producers of filaments for 3D printing or directly for large scale printing from granules. Typical UPM Formi 3D end use applications are prototypes, design, education and concept modules e.g. for architecture.

UPM Formi grades are available with FSC and PEFC certification.
Voith will supply Grupo Gondi with a new containerboard machine at Grupo Gondi’s new Papel y Empaques Monterrey (PEM) plant in Northern Mexico. The new machine, PM 7, will have a working width of 6,660 mm at the reel and a design speed of 1,200 m/min. The machine will produce testliner and corrugated medium with basis weights in the range of 90 to 250 g/m2 and have the capacity to produce 400,000 metric tons per year.

Eduardo Posada, CEO at Grupo Gondi said, “With the new paper machine, Grupo Gondi will strengthen its position in the Mexican market for high-performance lightweight recycled containerboard. It will also enhance our integration levels since our converting capacity has risen in recent years as we have expanded converting plants and grown through acquisitions.

“Voith will supply an extended scope of services, including the stock preparation, the paper machine, supporting sub systems and automation. Voith’s ability to deliver an advanced, full-line, state-of-the-art system was very important to us and we continue to work closely with our partners at WestRock in connection with project planning and execution,” Posada added.

Start-up of PM 7 is expected to take place in early 2020.

Valmet will supply Hamburger Rieger with a new containerboard machine at its Spremberg Mill in Germany. The 8,600-mm wide (wire) containerboard machine (PM 2) will produce uncoated white and brown testliner and white top testliner grades with a basis weight range of 90-180 g/m2 using recycled paper.

The design speed of the machine will be 1,500 m/min and PM 2 have the capacity to produce 500,000 tonnes per year.

Valmet said the total value of an order of this type is typically around EUR 70-90 million.

Valmet’s delivery will include a new high-capacity containerboard machine from headbox to reel followed by an OptiWin Pro winder. The winder was selected because it gives high capacity due to its proactive winding geometry and faster sequences. The winder is equipped with Dual Unwind giving even higher capacity because the parent rolls can be changed in only one minute.

The machine will be delivered with a fabrics package along with an automation package that includes Valmet IQ quality measurement system and Valmet DNA process control system.

The delivery will also include process support for six months after the start-up.

Start-up of PM 2 is scheduled for mid-2020.

Solenis and BASF have signed an agreement to combine BASF’s paper and water chemicals business with Solenis to jointly create a global specialty chemical company. The combined company intends to operate under the Solenis brand.

Financial terms of the deal were not disclosed.

“Together, we have a unique opportunity to create a customer-focused global specialty chemical company with an enhanced focus and expanded offerings,” said Solenis President and CEO John Panichella, who will lead the combined company headquartered in Wilmington, Delaware.

The transaction comprises BASF’s global paper and water chemicals business, including nearly 1,300 employees globally. Upon the close of the transaction and in accordance with local laws, employees will transfer to Solenis.

BASF’s paper and water chemicals production plants in Ludwigshafen, Germany, and Nanjing, China, will not transfer and will deliver raw materials pursuant to supply agreements.

BASF’s paper coating chemical business is not part of the contemplated transaction.

The deal is expected to close around the end of 2018 following regulatory approvals and other customary conditions. Solenis and BASF will continue to operate strictly as independent companies until the transaction is complete.
Stora Enso Testing Drones for Woodyard Inspections, Fire Detection

Stora Enso is testing drones at several mills in Finland, the Czech Republic, and China to make woodyard inventories faster, more accurate, and safer. Using drones for stocktaking means that workers do not need to walk between logpiles or watch out for the large telescopic handling machines used to move logs. This, of course, reduces the risk of accidents and injuries.

The drone used at Stora Enso’s mills is a standard, commercially available model. But company experts have created a special methodology to help map out flying routes and facilitate automatic conversions and 3D calculations. Once a flying route has been defined, the drone can perform an inventory independently — though still under human supervision.

“Woodyard inventories were our first priority task for drones, but the system is scalable and can also be used to measure piles of wood chips — or practically anything,” says Mika Korvenranta, Project Manager at Wood Supply Finland. “Drones can be equipped with different sensors, allowing us to measure several variables during a single flight.”

FLYING FIREFIGHTER ROBOT

Stora Enso’s Imatra Mills in Finland are meanwhile piloting a flying firefighter robot, developed by a local start-up. Whenever a fire alarm goes off, the robot automatically fits itself with a new battery, downloads the information it needs from the alarm system, and then promptly flies off to investigate.

“Such robots can help our first response team to better locate the scene of any fire and also give us information about relevant weather conditions, helping us to react faster,” explains Mikko Parikka, Fire and Security Manager at Imatra Mills. “They can particularly give us valuable footage from places that are difficult for people to get to, such as locations where hazardous gases are in use.”

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Case Paper announced that Teresa McClain recently joined the company’s Texas branch as Director of Sales and Operations. For the last decade, McClain has worked as an account manager in the commercial printing industry, selling offset, digital, and wide-format printing. Prior to that, she sold sheet and web papers from both domestic and foreign mills to commercial printers throughout the U.S. Southwest.

Iggesund Paperboard, part of Holmen, has appointed Pierre Aggarwal as the new Mill Director of Iggesund Mill in Sweden. Most recently, Aggarwal held the position of Mill Manager of Holmen’s Braviken Sawmill, and prior to that he worked at Holmen’s Hallsta paper mill. Aggarwal holds a master’s degree in Engineering from Linköping University.

Orchids Paper Products Company has appointed Mindy Bartel as Chief Financial Officer. Prior to joining Orchids, Bartel served as Senior Vice President of Finance and Chief Financial Officer at Carlex Glass America. She has over 25 years of experience in manufacturing and technology service industries.

Rottneros has named Kristin Israelsson as Mill Manager of Rottneros Mill in Sunne, Sweden. She will also become a member of Rottneros’ Group Management Team. Israelsson will begin her new role no later than September 1. Israelsson joins Rottneros from BillerudKorsnäs, where she most recently held the position of section head Gruvön pulp mill.

Sonoco announced that Robert C. Tiede began his tenure as the new President and CEO of the company on April 2. Tiede replaces Jack Sanders, who retired and served as President and CEO since 2013. Prior to being named CEO, Tiede served as Executive Vice President and Chief Operating Officer of Sonoco. Since joining Sonoco in 2004, Tiede has led all of Sonoco’s global consumer-related businesses, including Rigid Paper Containers, Flexible Packaging, Plastics and Display and Packaging.

Supremex appointed Guy Prenevost as Chief Financial Officer and Corporate Secretary, effective April 16. Prenevost most recently served as Chief Financial Officer of Rolland Enterprises Inc. and previously held various finance positions at Cascades Inc.’s Tissue Paper Products Division.

Fluoron, Inc. announced that Matt Lippman recently joined the company as Coatings Division Manager. Lippman has over 18 years of industry experience, most recently working as an R&D manager at Honeywell.

Precision Roll Grinders has named Edward Gumina as President and CEO. He succeeds Jim Manley, who had been with the company for 27 years and served as its president since 2002. Gumina has been with Precision Roll Grinders since September 2016 as Vice President of Operations. Gumina holds a Bachelor of Science degree in mechanical engineering from Rensselaer Polytechnic Institute and a master of business administration degree from Tiffin University.

Leonard (Lenny) Fiore, Senior Hardware Engineer for AMETEK Surface Vision, was presented with the prestigious 2018 Process Control Division Technical Award during TAPPI’s recent PaperCon 2018 event. The award is presented annually by TAPPI in recognition of outstanding contributions to paper industry science and technology. Fiore is responsible for many important design and technical developments for the paper sector and is named as an inventor on six U.S. patents.
JUNE 11-14, 2018
Nanotechnology for Renewable Materials
TAPPI
Monona Terrace Community and Convention Center
Madison, Wisconsin, USA
conference.tappinano.org

JUNE 17-20, 2018
PPSA Annual Safety & Health Conference
Pulp & Paper Safety Association
The Vinoy Renaissance St. Petersburg Resort & Golf Club
St. Petersburg, Florida, USA
ppsaconference.org

AUGUST 13-15, 2018
RISI Latin American Conference
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Renaissance Sao Paulo Hotel
Sao Paulo, Brazil
www.risiinfo.com/events

SEPTEMBER 24-27, 2018
Corrugated Week 2018
TAPPI and AICC
Indiana Convention Center
Indianapolis, Indiana, USA
www.correxpo.org

OCTOBER 1-3, 2018
Specialty Papers US 2018
Smithers Pira
Red Lion Hotel Paper Valley
Appleton, Wisconsin, USA
www.specialtypaperconference.com

OCTOBER 2-5, 2018
Tissue 2018
TAPPI and RISI
Fox Cities Exhibition Center
Appleton, Wisconsin
tissue2018.com

OCTOBER 4, 2018
Hall of Fame Induction Dinner
Paper International Hall of Fame
Radisson Paper Valley Hotel
Appleton, Wisconsin
www.paperdiscoverycenter.org/hall-of-fame

OCTOBER 10-12, 2018
RISI North American Conference
RISI
Parc 55 Hotel
San Francisco, California, USA
www.risiinfo.com/events

OCTOBER 10-12, 2018
MIAC 2018
Edipap
Lucca Fiere Exhibition Centre
Lucca, Italy
www.miac.info

OCTOBER 17-19, 2018
Paper & Plastics Recycling Conference
Recycling Today
Marriott Chicago Downtown Magnificent Mile
Chicago, Illinois, USA
paperplasticsna.recyclingtodayevents.com

OCTOBER 24-26, 2018
PPC Fall Meeting and Leadership Conference
Paperboard Packaging Council
The Whitley Atlanta Buckhead
Atlanta, Georgia, USA
www.paperbox.org

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A major byproduct in the papermaking industry is lignosulfonate, a sulfonated carbon waste material, which is typically combusted on site, releasing CO2 into the atmosphere after sulfur has been captured for reuse.

Now researchers at Rensselaer Polytechnic Institute in Troy, New York, have developed a method to use this cheap and abundant paper biomass to build a rechargeable lithium-sulfur battery. Such a battery could be used to power big data centers as well as provide a cheaper energy-storage option for microgrids and the traditional electric grid.

“Our research demonstrates the potential of using industrial paper-mill byproducts to design sustainable, low-cost electrode materials for lithium-sulfur batteries,” said Trevor Simmons, a Rensselaer research scientist who developed the technology with his colleagues at the Center for Future Energy Systems (CFES). He has patented the process with former graduate student Rahul Mukherjee.

Rechargeable lithium-ion batteries currently are the dominant battery technology. In recent years, however, much interest has grown around developing lithium-sulfur batteries, which can have more than double the energy of their lithium-ion counterparts of the same mass.

In recent years, much interest has grown around developing lithium-sulfur batteries, which can have more than double the energy of their lithium-ion counterparts of the same mass.

A rechargeable battery has two electrodes — a positive cathode and a negative anode. Placed in between the electrodes is a liquid electrolyte that serves as a medium for the chemical reactions that produce electric current. In a lithium-sulfur battery, the cathode is composed of a sulfur-carbon matrix, and a lithium metal oxide is used for the anode.

In its elemental form, sulfur is nonconductive, but when combined with carbon at elevated temperatures, it becomes
highly conductive, allowing it to be used in novel battery technologies. The challenge, however, is that sulfur can easily dissolve into a battery’s electrolyte, causing the electrodes on either side to deteriorate after only a few cycles.

Researchers have used different forms of carbon, such as nanotubes and complex carbon foams, to confine the sulfur in place, but with limited success. “Our method provides a simple way to create an optimal sulfur-based cathode from a single raw material,” Simmons said.

To develop their method, the Rensselaer researchers partnered with Finch Paper in Glens Falls, which provided the lignosulfonate. This “brown liquor” (a dark syrupy substance) is dried and then heated to about 700 degrees Celsius in a quartz tube furnace.

The high heat drives off most of the sulfur gas but retains some of the sulfur as polysulfides (chains of sulfur atoms) that are embedded deep within an activated carbon matrix. The heating process is repeated until the right amount of sulfur is trapped in the carbon matrix. The material is then ground up and mixed with an inert polymer binder to create a cathode coating on aluminum foil.

The research team has so far created a lithium-sulfur battery prototype that is the size of a watch battery, which can cycle about 200 times. The next step is to scale up the prototype to markedly increase the discharge rate and the battery’s cycle life.

“In repurposing this biomass, the researchers working with CFES are making a significant contribution to environmental preservation while building a more efficient battery that could provide a much-needed boost for the energy storage industry,” said Martin Byrne, CFES director of business development.

Initial funding for the research came from the New York State Pollution Prevention Institute (NYSP2I). The research team then secured a Bench to Prototype grant from the New York State Energy Research and Development Authority, administered through NY-BEST (New York Battery and Energy Storage Technology), to more fully develop the technology.

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Paper is one of the most successfully recovered and recycled commodities in the U.S. thanks to a strong, market-driven voluntary system. Since 1990, the U.S. paper recovery rate has nearly doubled, and it has equaled or exceeded 63 percent each of the past nine years.

One of AF&PA’s Better Practices, Better Planet 2020 sustainability goals is to exceed 70 percent U.S. paper recovery for recycling by the year 2020.

In 2017, the U.S. achieved a paper recovery rate of 65.8 percent — a slight decline from the record 67.2 percent in 2016.

A MARKET-BASED COMMODITY
The recovery rate is determined using data on the amount of recovered paper used to make new paper and paperboard by U.S. paper mills, and recovered paper exports. Supply, demand, and global economics all play a role in how much paper is ultimately recovered. Natural ebbs and flows in the market impact recovered paper as they would any other market commodity, and the recovery rate reflects the recovered paper market.

In 2017, U.S. mills’ consumption of recovered paper was actually up 1.1 percent from the previous year.

However, exports of recovered paper were down 7.4 percent. Notably, recovered paper exports to China were off 17.5 percent in 2017 and down 41 percent in the year’s last quarter, according to U.S. Census Bureau data, due to changes in China’s import policies for all recyclable materials. In the past, exports to China accounted for approximately 60 percent of U.S. recovered paper exports.

Also influencing the recovered paper market is the so-called e-commerce effect. As retail sales increasingly move away from brick and mortar stores to online shopping, many
purchases arrive at consumers' homes in corrugated cardboard boxes. The recovery of those boxes for recycling varies widely by locality.

QUALITY COUNTS

While the industry’s Better Practices goal focuses on increasing the quantity of paper recovered, AF&PA has also long advocated for recycling stream improvements that would limit contamination of recovered paper. High-quality recovered paper is critical for making new paper and paper-based products. We actively support policies and projects to improve the quality of paper recovered for recycling in the U.S.

Starting in 2015, our industry worked with the Institute of Scrap Recycling Industries (ISRI) to change definitions of recovered paper grades and allow for much lower levels of contamination. This led to updated recovered paper definitions and specifications that improve quality standards, including a protocol for claims, downgrades and rejections of unacceptable material.

AF&PA opposes new mixed-waste processing facilities that replace dedicated recycling streams and supports the collection, processing and utilization of recovered paper in ways that create less contamination so that it can go to its highest value end use, namely the manufacture of new products.

To educate consumers, we develop easy-to-understand materials that emphasize the why and how of high-quality paper recycling, such as the Recycle That Cardboard Box infographic. These resources are available on paperrecycles.org.

INDUSTRY LEADERSHIP

Companies in our industry have been leading on paper recycling for decades, beginning with the development of the chasing arrows recycling symbol that is now ubiquitous.

AF&PA’s latest survey on community access to recycling showed that 96 percent of the U.S. population had access to community curbside and/or drop-off paper recycling services in 2014. There were also significant increases in access to recycling for different paper grades.

We are a supporter of The Recycling Partnership, which creates public-private partnerships to build communities’ recycling infrastructure and improve consumer recycling outreach and education, giving partner communities the capacity to generate more and better quality recyclable materials. As of 2017, The Recycling Partnership has supported nearly 600 communities across the U.S. and reached 29 million households.

To ensure a growing supply of high-quality recovered paper, we identify which types of paper and paper-based products are currently not widely recycled and what barriers to recycling them exist. At present, we are working with partners to increase the recovery of corrugated boxes from residences and the recovery of clean, dry multiwall paper shipping sacks used for food products.

AF&PA remains committed to increasing both the quantity and quality of paper recovered for recycling. Optimal paper recovery maximizes our industry’s potential to reuse its products to make new ones — the useful products on which we all depend.
Pratt Industries is nothing less than an inspirational success story written with vision, persistence, and the belief that America is the land of opportunity. Since the early 1990s, privately-owned Pratt Industries has grown from a handful of corrugating plants and a recycled paper mill in the U.S., to the 166th largest private company in America with revenue of about $2.8 billion in fiscal 2017, according to Forbes.

The corrugated packaging and recycling company is the result of a father, Richard Pratt, and his son, Anthony, who had the vision to embrace recycling long before sustainability moved to the forefront of manufacturing.

**Visy History**

Pratt Industries’ roots reach back to Australia, where Visy Industries was born in 1948 with a 1000-pound loan from Richard Pratt’s aunt, Ida Visbord, for whom the company is named. Originally, there were three partners – Visbord’s husband Max Plotka, Richard Pratt’s father Leon, and engineer Les Feldman. Visy’s first operation was a sheet plant in Fitzroy, Melbourne, Australia. Interestingly, and with a little foreshadowing of its future path pinned to recycling, the first corrugator the company used was made from spare parts and recycled scrap metal.

Leon Pratt died in 1969 and his son Richard headed up Visy, overseeing dramatic expansion. Throughout the 1970s, Visy established new plants in New South Wales and Queensland, and by the end of the decade was making more than 100,000 tonnes of boxes per year.

Visy’s growth continued through the late 1970s and early 80s when it decided to gain better control of supply for its sheet plants by building 100% recycled paper mills, the first at Warwick Farm in Sydney. This decision not only signaled a shift in Visy’s corporate philosophy but placed the company at the forefront of the recycling movement in Australia, setting the company on the path to record growth and profits. By 1990, Visy’s national market share was over 40% with more than 2,000 employees.

Today, Visy Industries is one of the largest privately-owned paper, packaging and recycling companies in the world. The company operates more than 180 facilities worldwide.

**Editor’s note:** Richard Pratt died in April of 2009. His achievements within the paper industry during his career were recognized in 2002 when he was inducted into the Paper Industry International Hall of Fame (www.paperdiscoverycenter.org).
ANTHONY PRATT HEADS TO AMERICA

Anthony Pratt is Global Chairman of Pratt Industries and Visy Industries. Since moving to Atlanta, Georgia, in 1991, he has overseen the start-up and development of Pratt Industries, which then had annual revenues of about $100 million. Since that time, Mr. Pratt has engineered the company’s spectacular growth through an expanding supply chain that continues through a network of recycled paper mills, strategically-placed sheet plants, full-line box factories and display facilities, as well as a chain of distribution centers.

Mr. Pratt’s dedication to furthering the growth and success of his company hasn’t gone unnoticed. RISI’s Top 50 Power List 2017 placed him as the 6th most influential person in the world of pulp, paper and packaging.

According to RISI, the ‘Power List’ is put together by their editorial team after speaking to a lot of pulp and paper industry experts from around the world. Here’s what RISI’s editors had to say about Anthony Pratt:

“During the past couple of decades, the Australian billionaire has spent about US$2.5 billion building Pratt Industries into the sixth largest US containerboard producer, with four recycled containerboard mills and more than 60 box plants generating US$3 billion in sales.

“The Midwest has been a major area of recent investment, but recent speculation has been on Pratt Industries’ future expansion plans in the West, where the company bought Robert Mann Packaging. Pratt has talked of plans to build a US$1 billion corrugated box business in California and possibly add a mill on the West Coast. More recently, he mentioned plans to build a ‘high-tech, robotic’ box plant in California for more than US$70 million that could be capable of producing 135,000 tons per year of corrugated,” RISI concluded.

Currently, Pratt Industries operates some 70 manufacturing plants across the U.S. and employs around 8,000 people.

THE MILLS

Pratt Industries paper division operates 4 containerboard mills, which, combined, currently produce approximately 1,489,000 tons per year of recycled linerboard and corrugated medium. The mills production is geared to lightweight, high performance grades of containerboard. About 95% of that production is consumed internally by Pratt’s vertically integrated sheet and box plants. The mills utilize recovered paper as raw material, much of which comes from Pratt’s recycling group.

Conyers Mill. Pratt Industries built its first U.S.-based 100% recycled paper mill in Conyers, Georgia. The mill started up in 1995. Today, the Conyers Mill produces about 367,000 tpy of linerboard and corrugated medium.

The Conyers Mill also operates a Waste-to-Energy facility that supplies 100% of the steam and 40% of the electricity requirement to the mill. The Waste-to-Energy facility uses mill rejects, construction wood waste and other fuel sources that would otherwise be sent to a landfill.

Staten Island Mill. Pratt started up its second 100% recycled paper mill on Staten Island in New York City in April of 1997. In 2017, the mill produced about 370,730 tons of linerboard and corrugated medium. A corrugated box plant is situated adjacent to the mill, which the company opened in 2008.
In September of 2009, a third 100% recycled paper mill was opened in Shreveport, Louisiana along with a paper recovery facility adjacent to the mill. At that time, Pratt also rolled out a commercial recycling program in the Shreveport area.

Valparaiso Mill. Pratt Industries built its fourth, 100% recycled paper mill in Valparaiso, Indiana. A Valmet-supplied containerboard production line, PM 16, successfully came on stream on October 4, 2015. The company held an official opening ceremony in late-March of 2016 that was attended by more than 300 guests including the then-Governor of Indiana, Mike Pence.

At that time, the Valparaiso mill represented the single largest investment the company had ever made in the U.S. The $260 million mill, located 50 miles southeast of Chicago, sits adjacent to the company’s existing 500,000 sq. ft. corrugated box factory. The mill also supplies Pratt’s expanding Midwest box-making operations.

The Valparaiso mill is capable of producing 370,000 tons of recycled containerboard per year. It was designed to use even less water, electricity and natural gas than Pratt’s three other containerboard mills. Typical grades produced at Valparaiso range between 23# and 35#, but the mill can produce both lighter and heavier grades as required. The company believes there will be an increasing marketplace demand for even lighter weight papers and the mill has been designed to make sub-23# grades.

Wapakoneta Mill. Pratt Industries’ latest investment in America, a $275 million greenfield containerboard mill, will be built on a 60-acre site (part of a larger 110-acre parcel) in Wapakoneta, Ohio. Groundbreaking took place in April of this year and the project is slated for completion in the fourth quarter of 2019. The additional 50 acres in the land parcel may possibly be used in the future for a corrugated box plant, but Pratt has not confirmed plans for such a project.

When operational, the Wapakoneta mill will use 100% recovered paper to produce lightweight and high-performance linerboard and corrugated medium. In its first year of operation, the mill is expected to produce 180,829 tons and consume about 231,000 tons of mixed paper, OCC and double-lined kraft paper. At full capacity, which is expected to take place in its tenth year of operation, the mill will produce 396,000 tpy and consume nearly 466,000 tpy of recovered paper.

Similar to PM 16 at the Valparaiso mill, Wapakoneta’s board production line, PM 17, is being supplied by Valmet and designed to be extremely efficient in its use of water, electricity and raw materials.

Mr. Pratt noted, “We want to help many companies to meet their sustainability goals without sacrificing their high-performance packaging requirements. That’s important not only for our environment but also for our customers who realize the importance of sustainable packaging.”
CORRUGATING AND CONVERTING

Pratt’s corrugating and converting division has over 92 locations strategically located throughout the U.S. consisting of corrugating facilities, box plants, specialty packaging plants, retail ready display services, warehouses and sales offices.

The aforementioned operations are able to supply packaging for durable and non-durable goods, and serve numerous end-use markets for corrugated packaging in North America including lighting, electronics, telecommunications, automotive, pharmaceuticals, toys, sporting goods, wine, spirits, vegetables, fruit, pizza, poultry and meats.

RECYCLING

Pratt’s Recycling Division is a full service recycler with 17 modern Material Recovery Facilities located from New York to California. The Division currently processes over 2.4 million tons of recyclable materials and municipal solid waste per year. Seventy-five percent of the Division’s total volume is utilized by Pratt’s four recycled containerboard mills. The remaining twenty-five percent is sold outside of Pratt’s facilities or is landfilled as part of its solid waste business. In addition, some items that cannot be recycled are used as fuel for Pratt’s clean energy plant in Conyers, Georgia.

The Recycling Division recycles a wide range of materials that are collected through its residential, community, school and commercial and industrial recycling programs. The programs accept a variety of recyclable materials including all types of paper, newspapers, magazines, catalogs, office paper, books, corrugated cardboard and mail. Additionally, Pratt accepts LDPE film, PET and steel banding, pallets, plastic containers (# 1-7 as well as other types of plastics), aluminum and steel cans.

CONCLUSION

At the 75th anniversary of the Battle of the Coral Sea event in New York City on May 4, 2017, Anthony Pratt pledged in the presence of President Donald Trump to invest $2 billion over the next 10 years in manufacturing facilities and jobs in the U.S.

“I’d like to pledge another $2 billion over the next 10 years doubling our rate of investment to create an additional 5,000 high-paying manufacturing jobs mainly in the Midwest,” Mr. Pratt said.

If history serves as a guide forward, the U.S. economy and jobs can take Mr. Pratt’s pledge to the bank, while continuing to be the beneficiaries of his persistence in sustainable manufacturing and his conviction that America is the greatest place in the world to manufacture.
The industry met at Paper2018 in New York City from March 11-13. Co-hosted by the American Forest and Paper Association (AF&PA) and the National Paper Trade Association (NPTA), Paper2018 brought industry executives together for unparalleled networking opportunities and timely sessions on emerging issues.

**Paper Industry Leadership Forum: Adapting to Disruption**

Dr. Frank Newport, editor in chief at Gallup, presented thought-provoking ideas on historical and current disruptive forces. From geo-political, environmental, biological, demographic and technological to economic disruption, Newport provided “the people’s” view on disruption.

Mike Doss of Graphic Packaging International, Mark Gardner of Sappi North America, Tom O’Connor, Jr. of Mohawk, Andrew Wallach of Central National Gottesman, Inc., and Pete Watson of Greif, Inc. shared their insights on how the industry can adapt to these disruptors in a panel discussion moderated by AF&PA’s Donna Harman. The leaders spoke of the importance of transparency to ensure employees’ and consumers’ trust; changes and opportunities presented by technology and artificial intelligence; challenges on trade created by political events; the requisite focus on customers’ needs; and the reasons they are optimistic about the future.

RISI Vice President of Global Graphic Papers John Maine gave the market outlook for printing-writing papers at the RISI Global Printing-Writing Papers Market Trends Session. Ken Waghorne, RISI Vice President of Global Packaging, followed with a discussion on trends in paper-based packaging and recovered fiber.
Sappi North America’s Bob Forsberg highlighted the need to recognize opportunities for the industry to be the disruptor by educating marketers on the value of print, capitalizing on trends, and communicating the great work the industry is already doing.

**Paper2018 Reception**

Event registrants networked at the Paper2018 Reception immediately following the Paper Industry Leadership Forum. Paper and Packaging Board President Mary Anne Hansan introduced the industry’s newest advocates – Casey and Page – with whom attendees were invited to interact on a green screen.

“It was our goal to create highly-relatable characters to represent the vital roles that paper and packaging play for each and every one of us,” Hansan explained. “We launched the Paper & Packaging – How Life Unfolds® campaign in 2015 and we are thrilled to introduce these new characters to help consumers nationwide recognize and remember the value of paper in their everyday lives.”

**RISI Sessions**

RISI Vice President of Global Graphic Papers John Maine gave the market outlook for printing-writing papers at the RISI Global Printing-Writing Papers Market Trends Session. Following a RISI-sponsored coffee break, RISI Vice President of Global Packaging Ken Waghorne discussed trends in paper-based packaging and recovered fiber during the RISI Global Paper-based Packaging and Recovered Fiber Trends Session.

**Paper2018 Luncheon**

NPTA presented the 2018 Stanley O. Styles Industry Excellence Award to Mohawk Chairman and CEO Tom O’Connor, Jr., who accepted the award on behalf of all Mohawk employees – past and present – and spoke about the importance of recruiting new people to the industry. Musician Billy McLaughlin, the Paper 2018 Luncheon speaker, shared the story of his struggle with focal dystonia, which disrupted his career and life but taught him never to quit too soon. McLaughlin wowed the audience with his unusual guitar-playing skills, encouraging them to sing along and challenging them to view existing company assets and expertise in new ways that can be positive disruptions. International Paper’s Greg Gibson spoke about the significance of the mailing industry to the paper business and the need for smart postal reform, and encouraged the audience to ensure the industry’s voice on the matter is heard by Congress.

**Save the Date!**

Paper2019 will be held March 24-26 in Chicago.
Paper and Board Have Key Roles in the Future of Packaging

Paper and paperboard will continue to play a vital role in the evolving and growing global packaging market.

Overall growth in dollar value terms for packaging was depressed for the years spanning the middle of the decade, although this is largely attributable to relative strength of the dollar against other currencies across that period. Still in 2017, value reached $851.1 billion, a 2.8% growth compared to 2016 at constant prices. This steady expansion is forecast to continue across the next five years — rising slightly to 2.9% year-on-year across this period — to reach $980.4 billion in 2017.

Regional Perspectives
The continuing trend towards large-scale mergers and acquisitions — for example the creation of WestRock from MeadWestvaco and RockTenn — is testament to the relative maturity of the packaging industry in developed world regions, like North America and Western Europe. The analysis in the new Smithers Pira report, The Future of Global Packaging to 2022, indicates that emerging and developing economies will contribute just over 70.0% of world packaging consumption growth during 2017-2022.

Asia is the largest market accounting for 42.1% of world packaging consumption in 2016. North America is in second place accounting for 24.3% of world packaging consumption, ahead of Western Europe with 18.4%. The emerging and developing regions of Eastern Europe, South & Central America, the Middle East and Africa account for the remaining 15.2% of world packaging consumption.

Asia is forecast to grow packaging consumption at the fastest rate, led by China and India. This is largely attributable to growing populations, rising disposable incomes, and a transition
from traditional markets to the purchasing of packaged consumerist goods, especially in the food segment. China alone is forecast to represent almost 48.0% of world packaging consumption growth through to 2022 with India accounting for a further 8.5%.

**Material Segments**

Board and paperboard (corrugated, folding carton stock and liquid paperboard) is the largest packaging material type covered in the Smithers study. It accounted for 35.7% of world packaging consumption in 2016, followed by flexible packaging (plastic, paper and foil) with 23.3%, rigid plastic packaging with 18.2% and metal with 12.2%.

Flexible packaging is forecast to grow consumption at the fastest rate through to 2022, driven by advantages in lightweight, demand for smaller more convenient packaging and improvements in design. Growth will be strongest for flexible plastics which are already two third of the market, but flexible papers will
perform only slightly less well across the five year forecast, with aluminum seeing the smallest boost, as pricing and improvements in competing barrier materials squeeze its share.

Food markets dominate flexible packaging consumption accounting for three-quarters of global consumption in 2016. Meat, fish and poultry; confectionery; dried food; and savory snacks are the largest food markets for flexible packaging. Pharmaceuticals, medical, cosmetics and toiletries are the largest non-food markets for flexible packaging.

Flexible Papers
While flexible paper packaging has been under threat from flexible plastics in some applications, it will remain an important constituent of the flexible packaging market for the foreseeable future. This is due to a combination of factors, its low cost, its perceived good environmental credentials, its use in laminations (often as a light barrier), and because consumers enjoy the tactile effect. A number of plastic films have been modified to mimic the feel and look of paper, while offering the benefits of moisture barriers inherent with plastic films. Matte finish BOPP is an example of such a film.

Papers continue to dominate some packaging applications, such as flour, sugar and some soft cheeses. Papers are still used widely in medical packaging; fast food wrap and metallized paper cigarette bundle wrap — as well as less formal developing world retail sectors. Dried food, processed meals and savory snack markets present growth opportunities for extrusion-coated papers, along with specialty medical packaging papers.

Corrugated Board
Growing environmental concern is benefitting the corrugated board market due to the perceived and real environmental benefits of cellulose-based packaging. However, lightweighting of board constructions is hampering volume growth slightly, although the impact on value is less pronounced.

Corrugated packaging companies are putting increased emphasis on shelf-ready packaging that significantly reduces the workload for unpacking and displaying products. This trend is now deepening with the rise of discount retailers — such as Aldi and Lidl in Europe — and convenience store selling, which are more likely to use less labor intensive shelving options and have fewer of their own branding priorities. This presents an opportunity for the brand to determine how their product is presented in store and gives an opportunity for them to invest in printed graphics for on-shelf differentiation.

This trend dovetails neatly with the wider availability of inkjet printers for corrugated board, giving brand greatly expanded options for versioned packaging, including bespoke designs of corrugated formats for short run promotions.

Flatbed inkjet systems have been available for corrugated for several years, but productivity and cost have limited these; often to point-of-sale displays, rather than packaging. Across 2017-2022 this situation will change as a new generation of high productivity inkjet presses — like the HP T1100S — especially designed for volume corrugated print are already seeing their first commercial installations.

E-commerce
The unspectacular, if steady, rise in demand for packaging in retail outlets contrasts with that in the e-commerce segment. The value of packaging demand into this sales channel was $28 billion in 2017, and will more than double by 2023. Over 75% of this is for corrugated formats, causing a surge in demand for fanfold for fit to packing applications, new designs for returnability, and lighter weight flutings that minimize the size of postal shipments.

From a packaging designer’s perspective with a customer encountering their goods away from E-commerce shipment places a premium on both protection and message communications on brand packaging. Source: Lil Packaging continued on page 30
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There is a growing trend for liquid packaging board producers to use renewable resources in order to enhance their environmental credentials. In 2016, for example, Tetra Pak announced the launch of a new version of Tetra Brik Aseptic 1000 Edge with Bio-based LightCap 30.

A shop, serving staff and, other prompts such as point-of-sale displays; packaging is taking on an increasing important role as the primary touch point for brand identity. This is generating interest in new designs that create an opening or ‘unboxing’ experience.

Pack printing is also a key medium in this new arena with many e-commerce retailers and brands investing in high-quality graphics on the exterior and especially the interior of the package, for decorative impact. This in turn is creating a spur for new linerboards that can carry improved imagery.

The position of folding cartons within global packaging will face competition in the future from new more streamlined pack formats — like resealable stand-up pouches — that do not require secondary cartons. Additional competition will also be seen from upright flexible packaging, e.g. shrink film for multi-packs of beverages, and corrugated boxes. Future demand will also be affected by factors such as falling sales of tobacco and cigarettes, and an increase in offshore production of toys and sports products that are shipped pre-packed.

Higher paperboard prices, which impact on profitability, may another challenge, but in the short term board prices are generally decreasing as a result of rising European board output and high exports from an oversupplied Chinese board market.

Folding cartons demand is predicted to grow in four main end-use segments. More spending is expected on luxury items, while the on-the-go eating trend will drive demand for retail carryout cartons. A larger ageing population and health enfranchisement worldwide will also increase demand for cartons in the pharmaceuticals category. Environmental factors and lightweighting is also expected to underpin faster than average growth in use of beverage cartons.

Folding cartons will also benefit from the digital print revolution. New dedicated inkjet platforms are joining toner based system in this segment, which has been targeted as the first by Landa Nanography with its B1-format S10 press now in beta testing in Israel.

**Liquid Packaging Board**

Liquid packaging board consumption is likely to be maintained over the next five years. With 70% of this market used in dairy and 20% in fruit juices it will benefit from the healthy eating trend in developed markets, combined with growing consumption patterns in the emerging markets.

There is a growing trend for liquid packaging board producers to use renewable resources in order to enhance their environmental credentials. In 2016, for example, Tetra Pak announced the launch of a new version of Tetra Brik Aseptic 1000 Edge with Bio-based LightCap 30. This is the first aseptic carton package in the world to receive the highest class of Vincotte certification for its use of renewable materials. The new package is manufactured using a bio-based plastic film and cap.

Innovations like micro-fibrillated cellulose (MFC), being pioneered by the likes of Stora Enso, offer the prospect of a biodegradable barrier film capable of replacing aluminum foil in liquid cartons.

Carton manufacturers are also introducing new and innovative carton products. These include the Combidome carton bottle from SIG Combibloc and Elopak’s Pure-Pak Sense Aseptic carton. The novel design and functional features of Pure-Pak Sense Aseptic cartons include easy-to-fold lines and the convenient flattening of cartons to reduce volume in waste and recycling facilities.

Liquid carton producers are also responding to consumer demand for packaging suitable for on-the-go drinking. Tetra Pak launched two portion-size packages in April 2017 to meet growing demand for on-the-go beverages. The Tetra Prisma Aseptic 200 and 250 Edge with Dreamcap 26 build on the success of the Tetra Prisma Aseptic 300ml, which has more than 100 customers and packages more than 340 brands. Tetra Pak forecasts that worldwide demand for portion packages under 250ml will grow to 72 billion liters by 2019, up 10% from 2016.

Full details of the global packaging demand in all world regions can be found in the Smithers Pira report, *The Future of Global Packaging to 2022*. For more information visit: www.smitherspira.com.
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