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Water conservation at APP Jinhai



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JULY 2013 - VOLUME 55 NUMBER 7
THE POWER ISSUE

Cover: The RISI Power List: Some of the people who hold sway over the industry

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FROM THE EDITORS

Don't be a Nintendo papermaker

By GRAEME RODDEN, Executive Editor



I SAT IN ON A MOST INTERESTING session during the recent TAPPI PaperCon event. It was first session of the paper machine performance evaluation track, a conference-long series of sessions, chaired as usual by the very knowledgeable Jeff Reese, International Paper. In the first session at least, he was assisted by his father, Richard (Dick Reese and Associates). Between the two of them their knowledge of paper machines is encyclopedic.

Dick Reese led off the session with a short presentation based on his more than 50 years' experience working in the industry. As can be expected, virtually everything connected with a mill – equipment, technology, instrumentation, procedures and quality – has changed significantly over the past 50 years. He noted that speed have changed dramatically since 1970: the top linerboard machine now hitting 5,494 ft/min from 1,500 ft/min; newsprint machines now running at 6,627 ft/min, up from 3,000 ft/min.

The rest of the first session was a roundtable format. Jeff went around the room asking those in attendance what was the most interesting or useful thing they had seen during a paper machine performance evaluation. The range of answers was amazing. One of the first was that cleanliness is an intangible contribution to performance. I'll come back to this comment later.

Have a look for yourself

Another was that more vacuum is not necessarily a better thing. One noted that the opportunity for energy savings may be as simple as repairing a small condensate leak. One delegate decried the rise of "Nintendo papermaking", that is, relying too much on the computer screen and not going out on the floor to have a look.

This led to another delegate remarking that there needs to be more robust 'reality checks' in mills. For example, check the consistency of starch to ensure it is what the system claims, the same with dye controls. "Lying" data and sensors are not unheard of.

Other observations by this veteran audience of paper-

makers, consultants and suppliers as to what leads to good performance or contributes to bad: Good lost time analysis; a good diet to the paper machine refined properly; insufficient maintenance of ageing paper machines; cameras help you remember how it used to be, i.e., year over year operations.

Older and smaller does not mean second rate

Going back to the cleanliness observation, Jeff asked me what I had seen in my years of covering the industry that I found most interesting. Being neither a papermaker nor an engineer, I was a bit intimidated by the question at first, asking for my opinion in a room full of experts. But, after thinking about it, I said that a small mill I visited in upstate New York a couple of years back had really caught my attention. Burrows Paper in Little Falls (PPI, February 2011, p.13) is more than 90 years old and the mill and head office occupies a building bordering the Mohawk River.

It is a specialty papermaker with smaller paper machines. After interviews in the office part of the building, I was led downstairs walking through what seemed like a maze to the machine room.

However, the machine room was spotless as was the machine. It ticked along, almost effortlessly it seemed. It did not look like an old machine. Going back to the original article, I wrote: Keeping smaller, older machines producing highly specialized grades at the high quality level that customers demand is a never ending task.

Burrows seems to understand what is needed to keep a mill in top condition. So while cleanliness is said to be next to Godliness, it may also be next to saleability. The entire session provided a good lesson for mills to see where improvements can be made and what to watch for and what can be done without a huge capex. **PPI**



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HERCULES

WHAT'S NEW

NEWS SHORTS FROM THE PULP AND PAPER WORLD

MERGERS & ACQUISITIONS

KapStone to acquire Longview Fibre from Brookfield

KapStone Paper and Packaging Corporation (KS) and Longview Fibre Paper and Packaging, Inc. jointly announced that they have signed an agreement for KapStone to acquire the stock of Longview Fibre Paper and Packaging, Inc. from Brookfield Capital Partners II, a private equity fund managed by Brookfield Asset Management Inc. in a cash free, debt free transaction for \$1.025 billion in cash and subject to certain post-closing adjustments. Closing of the acquisition is subject to a number of customary conditions, including regulatory review.

Longview is a leading manufacturer of high quality containerboard, lightweight high performance multiwall paper, specialty Kraft papers, and corrugated containers located in the Pacific Northwest region. Longview's operations include a mill located in Longview, WA equipped with five paper machines which produce 1.15 million tons of containerboard and Kraft paper annually. In 2012, Longview generated \$831 million in net sales and \$118 million of EBITDA. In the first quarter of 2013, Longview's net sales were \$217 million generating \$42 million of EBITDA.

Chairman and chief executive officer of KapStone, Roger W. Stone, stated, "Acquiring Longview is an outstanding opportunity for numerous reasons. The acquisition immediately adds value for our shareholders by increasing earnings and generating very strong free cash flow. The deal is accretive to our bottom-line from Day 1. Our balance sheet, which was strong going into this transaction, remains strong after the acquisition. The combined company is expected to deliver substantial free cash flow in the first year allowing KapStone to quickly de-lever."

"This acquisition will increase our exposure to the highly desirable containerboard segment. It also broadens our Kraft paper line and makes KapStone a global producer of high performance extensible multiwall paper, a grade which is growing at about 4% per year."

MERGERS & ACQUISITIONS

Chilean Empresas CMPC might divest packaging business

Chilean paper company Empresas CMPC may sell its paper products arm to International Paper (IP), local agencies report. The company currently operates three corrugated box plants in Chile, located in Quilicura, Buin and Til Til, producing over 182,000 tonnes/yr of corrugated board. CMPC's paper products division also includes multiwall sacks and molded pulp trays production. It is not clear at this time which of them would be part of the deal.

Three potential buyers visit UPM's Docelles UWF paper mill in France

Three interested buyers have visited the site of UPM's Docelles mill in Vosges, northeastern France, which the company put up for sale in January. However, UPM said it was too early to give details about the interested parties. On January 17, UPM announced that it would immediately start a sales process of the Docelles mill and that this would be given a maximum of six months. UPM has been in contact with 160 bidders over the past three months, the spokesperson said. The Docelles mill has a capacity of some 160,000 tonnes/yr of uncoated woodfree paper on one machine. It employs approximately 170 people.

Kimberly-Clark sells its Reisholz tissue mill and German rolled tissue brands

Kimberly-Clark has concluded the final handover of its Reisholz tissue manufacturing mill and its German rolled tissue brands, including Hakle® Dry Toilet Tissue, Dick&Durstig and Servus, to palero invest, a small cap Private Equity Fund advised by palero capital GmbH. The sale was announced in November 2012. Kimberly-Clark will continue to use the Hakle® brand name for its moist toilet tissue brand in Germany for a period of time, after which the product will switch to another brand name. Furthermore, Kimberly-Clark will continue to use the Hakle® brand across both rolled and moist toilet tissue in Austria and Switzerland.

TOP TEN HEADLINES ON THE RISI WEBSITE LAST MONTH

1. RISI VIEWPOINT: Effects of China's Green Fence initiative on the global recovered paper market
2. International Paper closing central Florida corrugated box plant
3. RISI VIEWPOINT: The ambiguous definition of the major containerboard grades
4. Georgia-Pacific to acquire all outstanding shares of Buckeye Technologies
5. Chinese P&B growth keeps slowing down
6. RISI VIEWPOINT: Western European newsprint demand could fall dramatically
7. After about a \$100 increase in linerboard export prices, US levels may be hitting a ceiling
8. International Paper's 1Q 2013 results: net earnings up 69% from year ago
9. SP Fiber starts up PM 2 at Dublin on lightweight recycled containerboard
10. Stora Enso halts two newsprint PMs in Sweden for market related reasons

For more daily news headlines, visit www.risi.com

WHAT'S NEW

PROJECTS & OPERATIONS

Green Bay Packaging to invest \$95 million to expand coated products operations in Wisconsin

Green Bay Packaging is undertaking a \$95 million expansion of its Coated Products operation located in Ashwaubenon, WI, near Green Bay, to improve quality and allow future growth of their business, according to a state agency statement.

The company will build a new 240,000 ft² building, along with new converting equipment for its existing manufacturing operation. The building will include a state of the art storage and retrieval system for inventory and movement of raw materials and finished goods.

Most importantly, this investment allows us to further improve our strategic focus on flexibility and responsiveness to customer requirements," said Green Bay Packaging president Will Kress in a press release.

The new plant is set to open in first quarter 2015.

The coated products business includes laser and ink jet labels,

coated papers, films, foils, direct thermal, thermal transfer, laser/ink jet, digital, and specialty products.

The company is eligible for up to \$1.976 million in tax credits through the Wisconsin Economic Development Corp. (WEDC) to assist in the expansion. The Village of Ashwaubenon is providing a \$1 million TIF incentive and supporting the vacation of a street to allow this development to occur.

"An important part of our business development strategy is to help Wisconsin businesses that are investing in their future to meet new opportunities and retain jobs," said Reed E. Hall, secretary and chief executive office of WEDC in a press release.

"Green Bay Packaging has maintained its legacy of being a strong Wisconsin company."

UPM waits for environmental license to expand pulp production in Uruguay

After almost one year since UPM submitted an environmental study to the Uruguayan authorities to increase its Fray Bentos plant's bleached eucalyptus kraft (BEK) pulp output by 200,000 tonnes/yr to 1.3 million

CALENDAR

AUGUST

5-7: **RISI South American Pulp and Paper Outlook Conference**

- Intercontinental Hotel, Sao Paulo, Brazil, events@risi.com

OCTOBER

7-9: **RISI North American Forest Products Conference**

- Hotel del Coronado, San Diego, CA, events@risi.com

28-31: **PPI Transport Symposium 20**

- Baltimore, MD, www.transportsymposium.com

NOVEMBER

18-20: **RISI Packaging Conference**

- Miami, FL, events@risi.com

DECEMBER

10: **PPI Awards & Global Outlook Conference**

- Hotel Intercontinental, Istanbul, Turkey, events@risi.com

↑ GOOD MONTH FOR . . .

Sappi Fine Paper North America

Sappi Fine Paper North America has been selected as a recipient of IDG's *CIO Magazine* 2013 CIO 100 award. The 26th annual award program recognizes Sappi's Ringer Detection System project at the Somerset, ME, mill for exemplifying the highest level of operational and strategic excellence in information technology (IT).

Klabin

Fabio Schvartsman, Chief Executive Officer of Klabin, has been named the 2013 Latin American CEO of the Year by RISI. The award will be presented to Schvartsman at the Eighth Annual RISI Latin American Pulp and Paper Outlook Conference on August 6 in São Paulo, Brazil. It is the second consecutive year that Schvartsman has won the award

Mondi

Mondi was announced the winner of the "Sustainable Business - Sector Category" by Nedbank Capital at its Sustainable Business Awards in Johannesburg, South Africa. Mondi has been recognized as a Sector Category winner in three areas of it work.

↓ BAD MONTH FOR . . .

Tamil Nadu

According to the United News of India, the dry Cauvery River not only affected the farming operations in the Cauvery Delta Region but also severely affected the production of the State-owned Tamil Nadu Newsprint and Papers at Kagithapuram in early June.

Reno de Medici

Workers downed tools on June 3 and 4 at Reno de Medici's (RDM) Villa Santa Lucia plant in Italy. Production was suspended for two days but has resumed. The unions reportedly aimed to put pressure on RDM management to respect the agreement they reached with the Labor Ministry on March 6 regarding the redundancies related to the corporate reorganization.

Temple-Inland

According to *The Advocate*, Temple Inland, which caused a major fish kill on the Pearl River in 2011 when it released pollutants from its Bogalusa paper mill, was ordered to pay \$3.3 million in criminal penalties, according to U.S. Attorney Dana Boente. U.S. District Judge Ivan R. Lemelle also sentenced the Austin, TX, company, now owned by International Paper, to two years probation.

WHAT'S NEW

tonnes/yr, no decision has been taken yet. "This is a legal process and thus is advancing within the legal framework. UPM has presented all required studies to the Uruguayan authorities and hopes to get a resolution soon," the company told RISI.

UPM says it will be able to expand the Fray Bentos pulp production using the existing mill's installations and with no additional investment as the plant has reached high efficiency in all processes. The company also stated that its Uruguayan unit has been performing with excellence since it started operations five years ago, adding that all environmental results are public.

New Zealand's Envirocomp set to open diaper recycling plant in the UK

Envirocomp, one of the first companies in the world to successfully compost waste from absorbent hygiene products (AHP) and a part of the international facilities services company OCS, will open its first UK plant in Rochester in autumn this year. Based in an existing waste facility, commercial customers in southeast England will have the option of composting all types of AHP waste, such as diapers, feminine hygiene products and adult incontinence products. The waste will reportedly be collected from customers of Cannon Hygiene, which is also a company within the OCS group and provides washroom and hygiene services to a large number of companies in the area and across the UK. According to Envirocomp, the Rochester plant will be able to compost up to 6.5 million diapers and other products per year. All in all, around 2.7 billion disposable diapers are purchased in the UK every year, and diapers and other AHP products generate more than 600,000 tonnes of waste each year. Envirocomp, which runs two similar plants in Canterbury and Wellington, New Zealand, has been operating since 2009. The recycling process was developed by the husband and wife team Karl and Karen Upston in collaboration with HotRot Organic Solutions. In 2001 Envirocomp was acquired by OCS, which employs 74,000 people worldwide and has a global turnover of £850 million (\$1.3 billion).

Panther Packaging Group to invest Euro 90 million to safeguard its future viability in Germany

The Panther Packaging group of companies, which comprises manufacturers of corrugated-board packaging, display solutions and paper, is implementing a new program of investment to generate further growth among the various companies belonging to the group.

Following extensive investments in recent years, new real estate is now being acquired and existing plant buildings extended. This will provide more space for additional production and processing machinery and bring improvements to the respective internal logistics processes.

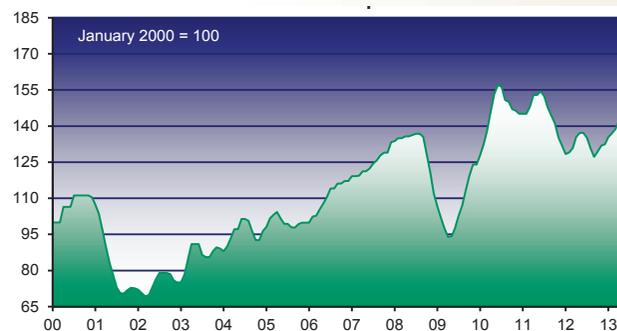
In the next few years, a total of about 90 million euros will be invested in safeguarding the group's future viability in terms of complying with the increasingly exacting demands of its clients and enhancing the group's quality and service levels. For example, a doubling of production capacity is planned for the companies Altonaer Wellpappenfabrik and Südwestkarton.

LATEST RISI PULP PRICE INDICES

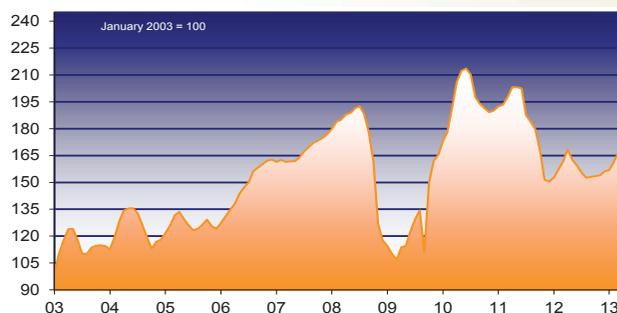
RISI European Pulp Price Index



RISI North American Pulp Price Index



RISI Asian Pulp Price Index



Get an objective view of pulp and paper markets with the industry's most trusted prices and market reports. Learn more at www.risi.com/ppmp

WHAT'S NEW

THE MONTH IN PICTURES



Connect Wilson, a subsidiary of Connect Chemicals, has invested in the construction of a new production site for its WinCon products. The facility will have the capacity to produce 4,000 tons/yr of color formers.

Judges carefully deliberate to determine the best carton design in the Paperboard Packaging Council's 2012 carton competition



Metso will supply a complete tissue line for PT Suparma, Indonesia. It includes an Advantage DCT 100 tissue machine and OptiFlo headbox and Advantage AirCap Yankee hood. Startup is 2014

Cheung Yan, chairlady of Nine Dragons, receives the Papyrus Award from Ranjet Baxi, president of the paper division, BIR, during the 2013 World Recycling Convention & Exhibition in Shanghai. Photo courtesy Masafumi Hongan, Recovered Paper Journal



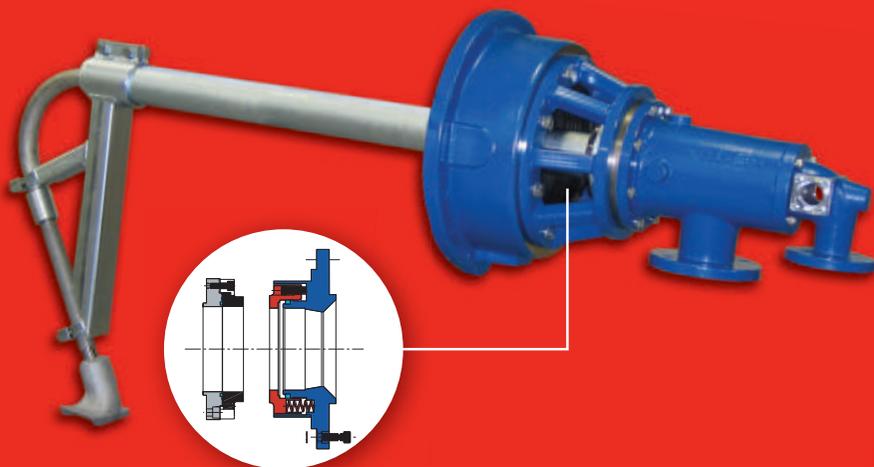
QUOTE OF THE MONTH

"The EPA has gone to great lengths to balance critical public health concerns with the need to make them achievable and affordable for businesses throughout the country. We believe that finalizing these rules with the clarifications we've requested will help EPA achieve this balance for our state."

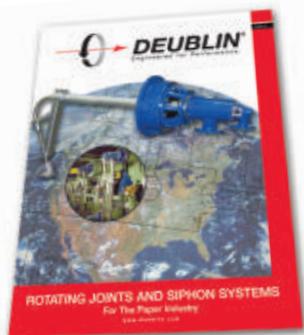
Maine's Senator Angus King and Representative Mike Michaud in a letter sent to the Environmental Protection Agency on regulations impacting Maine's paper industry. They requested that EPA clarify a boiler rule and amend the list of non-waste fuels.

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BY GRAEME RODDEN, MARK RUSHTON and SALLY COUSINS with files from GREG RUDDER

THE RISI TOP 50 POWER LIST

Now in its sixth year - and as our regular readers will know - the Power List is not a popularity contest, nor is it a catalogue of the great and good in the industry. What it is however is our own 'editors choice' mixed in with a lot of ideas from people we have talked to on the front line about who (and what) are seen as the major influencers in the global industry.'

Some of the entries are of course controversial, take our No. 1 on the list this year Teguh Ganda Wijaya, of APP. The reason the chairman of the Asian giant in pulp and paper tops the list is that, in our opinion, the next year of expansion and progress the company makes are going to affect the global industry in terms of increased competition and internal and external dynamics.

Our No. 2, Jussi Pesonen, has made that high rank due to the incredible amount of work the company is doing outside the sphere of pulp and paper, perhaps signalling that there is more things that can be done with raw materials other than making pulp and paper.

Readers will notice an increase in packaging producers on the Power List this year. Whilst this is obvious as this sector is one of the burgeoning ones in the industry, it is also very exciting as more and more big brands recognise the sustainability advantages of fiber based packaging over plastic. To that end we have added a few interesting brands to the mix this year, and

you will be seeing a lot more of the subject of sustainable packaging in the pages of *PPI* magazine going forward.

As always, we would like to ask you the reader to respond. Who would you like to have seen on the Power List this year? Have we left anyone off who you think should be on there? We would be interested to hear your views. Please check out our discussion forum on the RISI Group on LinkedIn.

1. Teguh Ganda Wijaya, APP

This is the sixth time the chairman of APP has appeared on our list, and always near the top as the company has continued with its mission to be the No 1 pulp and paper company on the planet. But this year comes with a major difference; it appears that APP is in the throes of a dramatic turnaround in its relationship with the NGOs – always a colourful one. Earlier this year chairman Wijaya himself announced the complete cessation of natural forest clearance in Indonesia an activity that was hindering its forward progress as the NGOs including Greenpeace and WWF waged a full on and successful battle against the Asian giant.

Could this dramatic turnaround see APP achieve its ambitions and top the world



producer list? Already it seems the company is revving up its expansion plans with a rumoured 2 million tonne brand new pulp mill on the island of Sumatra. Clearly this expansion, and others within the group in Indonesia, China and the rest of the world, are going to have a resounding impact on the global paper industry as APP looks to achieve its goal.

2. Jussi Pesonen, UPM

A regular to our list, the straight talking Finn heads up one of the largest pulp and paper companies in the world, UPM (No. 6 in the *PPI Top 100* 2012). But it is not for this reason that he has been elevated from 4th on the list last year to 2nd this year. The reason for the shift towards the top of our list is that company's "Biofore" strategy – a personal vision of Pesonen's - is beginning to bear fruit as it nears production of its first biofuel product, *BioVerno*. The fuel will, says the company, decrease greenhouse emissions of transport by up to 80% in comparison to fossil fuels.

The company also has other numerous bio projects lined up, including a biomass-to-liquid refinery that it has been given a European Union grant for, and a recently announced biochemical joint venture with Renmatix, US specialist developer manu-



facturer of cellulosic sugar. It also is seeing major success with its wood composite product, ProFi, which is being seen as the new green manufacturing and construction material.

Of course UPM continues to be one of the largest pulp and paper manufacturers in the world, and it looks like it might get bigger on the pulp front as it waits for a licence to increase production at its Uruguayan Fray Bentos mill by 200,000 tonnes/yr.

3. John Williams, Domtar

Following on the opening of the world's first nanocrystalline cellulose plant in Windsor, QC, Domtar has just opened the world's first commercial application of Metso's LignoBoost process at its Plymouth, NC, mill site. Under Williams' leadership, the company is now firmly entrenched as one of the North American forest products industry leaders in the burgeoning bio sector. Other diversification efforts include a specialty paper long-term supply deal with Appleton Papers to produce coated thermal receipt papers



But the company is not forgetting its core business. As well as being one of the white paper sector giants, Domtar is continuing its pursuit of a strong position in the growing personal care business. In 2011 it purchased Attends Healthcare (adult incontinence products) and just recently it announced it had bought Associated Hygienic Products, the largest manufacturer and supplier of private label baby diapers in the US. The move fits in well with Domtar's growing production of fluff pulp. Financial analysts were quick to praise the move, noting that the company's synergy of \$10 million was "likely conservative."

4. John Faraci, International Paper

The perennial Number 1 company in PPI's Top 100 rankings (PPI September, 2012), under Faraci's leadership, has become a powerhouse in North America via containerboard and worldwide through ventures and capacity in Brazil, Russia, China and India. IP is the largest producer in the world of uncoated freesheet capacity, the largest in the world in containerboard capacity And a major player in both market pulp and coated paperboard. Its recent acquisition move into India combines with the company's other global expansionist efforts in China, Brazil and with Ilim in Russia, which is set to inaugurate its large expansion project.



5. Jim Hannan, Georgia-Pacific

The company continues to grow in building products with the expected acquisition of International Paper's Temple-Inland building products unit. Hannan said in the second quarter that the building products unit for the company may be its strongest. Add to that G-P's strength in tissue where it is the world's largest producer. As well, it is the third largest containerboard producer in North America, the fourth largest uncoated freesheet producers and a major player in fluff pulp with its potential acquisition of Buckeye. The company, owned by Koch Industries, has continued to thrive under Hannan's leadership, trimming costs and growing its position in all its markets in the last three years.

6. Peter Oswald, Mondi Europe & International

Oswald was this year's winner of the prestigious RISI European CEO of the Year award, and a well-earned award it was too. Heading up one of the leading companies in Europe, Oswald has plotted and steered a course that has seen Mondi head for the added value areas such as specialist packaging, as well as expand in some of the emerging regions of the world, for example Eastern Europe and China.

Oswald is a great believer that a lot more rationalization will have to continue in order to ensure a stable market in the future, and says that those who do not read the writing on the wall and adjust capacities will continue to destroy value.

A company that is always top of the tree on green issues, recently Oswald told RISI that "a successful business is a sustainable business, and as long as Mondi stays on this path, I will get a good night's sleep".

7. Chinese government

The government's proposed Green Fence program has already had far-reaching effects. Started in February, the Green fence effort was created by the government's new leadership to focus on reducing pollution and improving the environment. The program immediately became a key issue for US recovered paper exporters. The US exports 70% of its recovered paper to China (14 million tons in 2012). With the Green Fence, Chinese customs inspectors more aggressively checked bales of recovered paper from the US, mixed paper primarily. Rejections resulted, forcing US suppliers to clean up their mixed paper loads and remove contaminants such as plastics and glass. Some mill buyers believe the Fence could lead to improved quality for mixed paper. Others

believe the program could eventually leave Chinese paper and board mills short of secondary fiber if the inspection program remains too stringent.

8. Cheung Yan, Nine Dragons

Nine Dragons is already China's No. 1 paperboard packaging producer with around 11.5 million tonnes of production annually, but that is set to increase further over the next three years as the company starts up six new production lines in China and abroad.



According to the ever ambitious Ms Cheung Yan, chairlady of the packaging giant, the exuberant demand in the regions where the company operates as well as the downstream production capacity, means that supply and demand for paperboard products in the market will gradually increase. The company plans to build five new production lines in China and one production line of phase II at its Vietnam base. The new lines will increase capacity over the next few years by around 2 million tonnes/yr.

9. Jouko Karvinen, CEO, Stora Enso

Karvinen has been CEO for over six years with Stora Enso and has overseen dramatic changes, expansion and investment. Part of this investment strategy has recently consisted of the inauguration of the company's new containerboard machine in Poland, which is aimed at strengthening the company's position in the growing markets of Central



and Eastern Europe, whilst at the same time supporting its packaging growth strategy. Forever looking to the future, Karvinen sees the expansion into Poland as being another step in the company's transformation into a "value-creating renewable materials com-

pany focusing on growth markets".

In his recent comments regarding first quarter results Karvinen announced that it was time to "rethink structures" following on from its first quarter results of 2013 being clearly characterized by weak markets due

NOTICE OF APPOINTMENT

MARIO PLOURDE

President and Chief Executive Officer
of Cascades



Cascades is pleased to announce the appointment of Mario Plourde to the position of President and Chief Executive Officer.

Mr. Plourde is Chief Operating Officer of Cascades and has been managing the company's operations since 2011. He works in close collaboration with the President and heads up the management team responsible for operations of the various business segments of the company's three major groups (Tissue Group, Containerboard Group and Specialty Products Group).

Since his arrival at Cascades in 1985, Mr. Plourde has occupied various positions including Controller, Plant Manager and General Manager. In 1997, he was appointed Vice-President and Chief Operating Officer of the Specialty Products Group, and was President of this group from 2000 to 2010.

"He belongs to the new generation of competent and dedicated leaders at Cascades, and he is a true believer in our values. My brothers and I have complete trust in Mario Plourde, and we firmly believe that he will perpetuate the company's philosophy as he leads it into the future," said Mr. Alain Lemaire, Executive Chairman of the Board.

Founded in 1964, Cascades produces, converts and markets packaging and tissue products that are composed mainly of recycled fibres. Cascades employs more than 12 000 men and women, who work in over a hundred modern and versatile production units in North America and Europe. With its management philosophy, close to half a century of experience in recycling, and continuous efforts in research and development as driving forces, Cascades continues to deliver the innovative products that customers have come to rely on. Cascades' shares trade on the Toronto Stock Exchange under the ticker symbol CAS.



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to a combination of continuing structural decline in media driven paper grades and economic weakness.

10. Gary McGann, CEO, Smurfit Kappa

Gary McGann heads up one of the most recognizable global packaging companies, with operations in Europe and the Americas.

The company has been busy integrating its SK Orange County (SKOC) operations into the business with synergy estimates doubled to \$28 million – exceeding original expectations of \$14 million.

McGann has also been instrumental in Smurfit Kappa's recent strengthening of its sustainable business practices. The company has redefined its commitment to sustainable business practices and believes that profitable growth can be achieved by providing its customers with "innovative packaging solutions while continuing to minimize product waste, optimize resource use and re-use through recycling; and stimulating afforestation through sustainable forestry practices".

The company's focus on sustainability is according to McGann "a further step on a journey where we constantly strive to improve how we serve the interests of our customers; employees; the local communities in which we operate; and, our shareholders."

As announced in the company's recent Q1 results McGann outlined that the company's objective is to increase its exposure to higher growth markets such as the Americas.

11. Fabio Schvartsman, Klabin

Chosen RISI's Latin American CEO of the Year for the second consecutive year in 2013, under the leadership of the low-profile Schvartsman, Klabin has posted positive numbers for seven consecutive quarters. He

been able to manage the company's export mix or focus on the domestic market in turn. Klabin is well positioned with its packaging papers, particularly liquid packaging board, to take advantage of a growing South American market. The company has announced plans for two new paper machines as well as a new pulp mill although final approval on the latter is still pending. The company consistently outperforms competitors and as one analyst noted, Schvartsman deserves the award because of his in-house cost cutting program, realistic approach to new expansion projects and commercial strategy. Recently, Standard & Poor's raised its rating for Klabin to BBB-, which is an investment grade.

12. Marcelo Castelli, Fibria

Managing a giant is not easy as has been since Fibria was formed through the merger of VCP and Aracruz. Taking over the reins in 2011, Castelli has successfully led the company's leverage reduction efforts, going from 5x in 2012 to 3.1x this year. He did this by putting expansion projects on hold and focusing on cost reduction. Castelli has helped put Fibria back on track after its debt reached very high levels. It is said to be back in an investment mode. Some of these investments may come in the growing bio sector. Recently, Standard & Poor's raised its rating for Fibria to BB+, one step away from investment grade.



13. Alexander Toeldte, Boise Paper

Formerly with McKinsey Group, Toeldte has moved Boise to grow in packaging and containerboard, including a project to convert a newsprint machine at its DeRidder, LA, mill to produce lightweight containerboard.

Plans are also afoot to tighten the company's uncoated freesheet capacity by shutting two machines at its International Falls, MN, mill. It had already shut one in Oregon at the end of 2012. Boise is well situated in the specialty papers sector with its Wallula, WA, mill, where the company continues to grow business in the coated papers for labels. The company also is working to reduce its carbon footprint, working with MIT's Center for Transportation & Logistics and the Environmental Defense Fund on two projects to improve its carbon footprint by reducing its carbon dioxide emissions on rail and truck shipments and to optimize railcar utilization.

14. Per Lindberg, CEO BillerudKorsnäs

The merger of two of the strongest Swedish virgin fiber packaging companies – Billerud and Korsnäs was an example of a consolidation to create a stronger company with a well-established customer base. Previously chief executive of Billerud, Per Lindberg has hit the ground running with the newly merged company, supported by vice president and chief operating officer Christer Simrén, previously Korsnäs chief executive.

Lindberg, backed by his strong management team is striding ahead with high hopes for the new BillerudKorsnäs – with the company forecasting its combined knowledge base will offer the best in product development for customers.

Even more promising is Lindberg's plan for future international expansion, which long-term the merger offers a perfect base for. As an instrumental figure in the integration of the company, Lindberg will be focusing on realizing synergies whilst establishing world class efficiency.



15. José Honório, CEO, Portucel Soporcel

At the helm of one of the leading companies in the international pulp and paper market, José Honório has continued to make excellent progress. With a turnover topping Euros 1.5 billion, which represents almost one per cent of Portugal's GDP, the group set new records last year for output and paper sales – consolidating its position as Europe's leading manufacturer of uncoated woodfree (UWF) printing and writing paper and the sixth largest in the world.



It is also the European leader in the production of bleached eucalyptus kraft pulp (BEKP) and the fourth leading producer worldwide. On top of this, the group is Europe's leading producer of certified forest plants. Honório has also been instrumental in the future strategy of the company's renewable energy production.

16. Richard Garneau, Resolute Forest Products

RISI's North American CEO of the Year for 2012, Garneau had led a remarkable renaissance at the former AbitibiBowater. As one analyst noted, "He has done an excellent job in deleveraging the company despite the challenges in certain grades, specifically newsprint." The company's strong position in lumber should be a huge benefit as the US housing market rebounds. Resolute is also in the midst of diversifying its product mix to leave itself less susceptible to the ever declining newsprint market. Tissue is one possibility. Ever the optimist, Garneau has said that opportunities will come for a well-run company.

17. Jan Johansson, CEO, SCA

Jan Johansson has headed up SCA during its biggest transformation. Large transactions and sales saw it being transformed into a hygiene and forest products company. Despite a turbulent global economy, Johansson has played an essential part in achieving an increase of sales and profits last year as he continued to guide the company through its "strategic priorities of efficiency, innovation and growth".



On his watch, SCA carried out two historically important business transactions: the purchase of Georgia-Pacific's European tissue operations and the sale of its packaging operations to DS Smith.

At the end of last year, the 50 per cent holding in the newsprint mill in Aylesford, UK was sold and the company signed an agreement for the sale of the publication paper mill Laakirchen, Austria.

18. Teresa Presas, Director General, CEPI

The irrepressible Teresa Presas has been director general of the Confederation of European Paper Industries (CEPI) for 10 years following a strong background in the paper industry. She works tirelessly to promote the environmental benefits of paper and the positive attributes of the pulp and paper industry globally.



Presas has been an instrumental figure in CEPI's *Unfold the Future – 2050 Roadmap to a Low Carbon Bio-economy*

document. As part of this and her other work within the industry, she is a powerful lobbyist at the European parliament, and attends global events and conferences to continually highlight the essential role of the paper industry in the European economy.

19. Donna Harman, AF&PA

As president and CEO of the AF&PA, Harman continues to be the very public face for the forest products industry in the US, a strong public presence being something the industry has needed for a long time. This includes sending letters to the editor for articles that have been long on the usual paper industry criticism and short on fact. Under her leadership, the AF&PA was quick to recognize the growing importance of the bio-based sector and what it could mean to the industry. Among the key initiatives that the AF&PA has established for 2013 include advocating for the inclusion of industry products in the US Department of Agriculture's Bio-Preferred Program; working with the EPA and others to allow renewable biomass residual to be recognized as a carbon-neutral fuel source; and working with the EPA, lawmakers and others to support the development of practical and sustainable air regulations.



20. Matais Domeyko, Arauco

Startup of the 1.3-million tonne/yr Montes del Plata pulp mill in Uruguay draws closer. A joint venture between Arauco and Stora Enso, work on the mill is "significantly advanced" with startup expected in the third quarter. This will be one of Domeyko's great achievements following

on the heels of its expansion into North America to make Arauco the largest panel producer in the Americas and third largest in the world. The move appears to have paid off. First quarter sales in the panels division were up 78% compared with a year, thanks to the new acquisitions.

21. William Caesar, Waste Management Recycle America

Already the top supplier of recycled paper in the US, WMRA strengthened its king of the hill position by acquiring Greenstar Recycling, the seventh largest US recovered paper processor in early 2013. As one mill buyer in the south said, the more tons, the more leverage, the more power they will have in the industry. With recovered paper, Greenstar processes almost one million tons/yr and WRMA processes nearly 5.5 million tons. The WRMA acquisition is the latest in a series over the past five to eight years for WRMA. It is active in a number of recyclables other than paper. WRMA gains most of its recovered paper from its parent, Waste Management.

22. Derek Gray, McGill University

Representing all the researchers who do so much to drive innovation forward in this industry, Gray was one of the principal scientists who led the development of the nanocrystalline cellulose product now being produced at Domtar's Windsor, QC, mill. For this, he was awarded the 2013 Marcus Wallenberg Prize. The prize is awarded for scientific achievements that contribute to knowledge in fields of importance to the forest products industry. Through his research, Gray has shown that cellulose crystals in water suspensions align spontaneously in a specific

pattern, in turn creating unique optical properties. Gray's research has opened up opportunities to use wood-based cellulose in a whole series of new, value-creating applications.

23. Larry Montague, TAPPI

President and CEO of TAPPI since 2006, Montague has helped lead a resurgence of this member-organization based in Atlanta. As with other associations that suffered when the pulp and paper industry hit a downturn and costs were slashed, attendance at TAPPI conferences declined drastically. As TAPPI prepares to celebrate its centennial in 2015, under Montague's leadership, attendance at the annual Paper-Con conference has improved yearly for the past few years and the suppliers' exhibit is again a popular venue, so much so that in 2014, it returns to a convention center setting. TAPPI has also become involved with the issues of the day -- nanotechnology and the bio sector -- and has recently become very involved with safety, launching TAP-PI SAFE, a standardized approach to safety but which is customized for each mill.

24. Stephen Silver, FutureMark Paper

The company has just celebrated the first anniversary of its acquisition of Manistique Papers (the mill will be profiled in an upcoming issue of *PPI*) and as it did with its Alsip, IL, mill has made significant improvements. Since May 2012, the Manistique mill had hired 24 new people, added 60 new customers and reached a 5-yr high in production of recycled paper. Silver has said that FutureMark had intended to implement



the strategies that made Alsip successful so as to revitalize and grow Manistique and it look thus far that the move has paid off. The Alsip and Manistique mills are part of the FutureMark Paper Group but each are managed independently. To go along with such familiar names as PepsiCo, Dell and American Airlines, in 2012, the company added Sam's Club and Trader Joe's.

25. Xu Lianjie, Hengan International

Xu is one of the founding shareholders of Hengan, and a former *RISI Asian CEO of the Year* (2012). Hengan is a tissue producer that is taking huge advantage of a growth surge in China, it is also benefiting from a decrease in raw material prices, as well as the success of recent expansion.



In its latest financial results the group has shown 8.6% year on year growth and profit for its shareholders rising 32%. Hengan started up five 60,000 tonne/yr machines last year and has ordered eight more of the same capacity that will start up in 2014.

26 McDonald's

With a staggering 1.5 billion fries boxes being used globally each year, McDonald's is a powerful purchaser of board and paper.



This famous global brand has rid itself of its throw away reputation with an impressive and forward thinking sustainability policy. Either love or hate the food, the leading fast-food

restaurant deserves a mention for its ambitious commitment for specifying packaging that considers sustainability requirements and an admirable strategy for future improvement.

The company is striving for a target of 100% recycled or certified virgin fiber by 2015, although it has been using 100% fiber from legal and acceptable sources since 2008. It also plans to use achieve a figure of 100% renewable material by 2020 across its full range of packaging.

The company's focus on sustainability has included products coming out of styrene and into paperboard during the 90s as well as recent developments such as recycling 100% of used cooking oil and transferring to trucks for use as biodiesel.

27. KPS Capital

The firm has developed a novel way to complete an equity deal, trying to set up a company taken parts from three others. KPS is in the process of trying to acquire two Wausau Paper mills in Wisconsin, two Packaging Dynamics mills in the same state and output from PM 5 from the Verso Paper mill in Jay, ME. The combined company potentially would be the largest in the world in specialty paper production with capacity of about 600,000 tons/yr. KPS's past experience with the pulp and paper industry dates back 15 years with deals including such companies as Blue Heron Paper, Curtis Paper and Attends Healthcare.

28. David Paterson, Verso Paper

Paterson was a key player in the massive newsprint merger between Abitibi and Bowater. Now, he is working on a deal with Verso, the second largest coated P&W producer in North America. He has stated that the company is looking for an M&A deal or potentially converting into another paper or board segment. From his days at Georgia-Pacific, Paterson has experience on the containerboard market.

29. Miles Roberts, CEO, DS Smith

After winning CEO of the year at the RISI Awards in 2012, Miles Roberts has continued to make great strides in the packaging market.

Last year saw DS Smith acquiring SCA's packaging division for Euro 1.6bn, which subsequently broadened the company's presence from mainly UK and France into the Netherlands, Switzer-

land and the Nordic countries.

On a combined base the company is now the second largest manufacturer of corrugated products in Europe, with revenue of approximately £4 billion (\$6,238,800,00).

Roberts has already outlined plans to broaden its reach further into Europe, which could mean more mergers and acquisitions on the horizon for this global player.

30. Alain Lemaire, Cascades

A swan song for Alain as for the first time in almost 50 years, Cascades is without a Lemaire at the helm. In May, Mario Plourde was appointed CEO. He has been with the company 28 years and was previously COO. Lemaire remains as board chairman. Alain's brothers Laurent and Bernard also serve on the board. Under the

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leadership of the Lemaire family, Cascades grew to become sixth largest containerboard producers in North America, the fourth largest tissue producer and a significant player in boxboard, specialty products, deinked pulp and recovered paper. Its innovative products are perennial winners of countless awards. For example, its anti-bacterial paper towel recently won the Edison awards Consumer Packaged Goods: Cleaning Solutions category. With greenfield mill investments few and far between in North America, the industry is looking forward to the opening of Cascades Norampac's Greenpac mill in New York later in 2013. And, it recently took over controlling interest in Italy's Reno de Medici, a recycled board maker.

31. Berry Wiersum, CEO, Sappi Fine Paper Europe

Known for his passionate stance and determined nature, Berry Wiersum is recognized for his dedication and commitment not only to Sappi, but to the future of the industry.

Wiersum is the champion of the importance of innovation in the industry and the need to embrace chance and the opportunities it brings.

He is pioneering in his vision that the digital age and paper can co-exist with the continued introduction in the future of specialty papers that fit in with this ethos.

Talking at a recent RISI seminar he highlighted the growing trend of iPads and other tablet technology but rallied the industry to think differently. "We need to stop thinking about how to survive and start thinking how to convert challenges into opportunities and prosper."

With this methodology in mind he continues to lead Sappi Fine Paper Europe in to the future.

32. BNDES

Sometimes it is not a person, but an institution that makes its mark upon this industry. BNDES is the Brazilian development bank, the main financing agent for development in Brazil. It has played a fundamental role in stimulating the expansion of industry and infrastructure in the country. In 2012, it disbursed R156 billion. For the first nine months of 2012, the rise in disbursements to industry compared with 2011 was 18%, which shows a growing economy. Among the industries cited for "standing out" was the pulp and paper sector.

33. Li Hongxin, Sun Paper

Heading up one of the most powerful paper companies in China, Li Hongxin has been instrumental in guiding the company through industry changes while implementing a precision focused strategy for growth.



A recent winner of the 2013 RISI Asian CEO of the year award, Hongxin's commitment to Sun Paper's continual innovation and future development has been recognized. Another major achievement is the recent start up of the company's new 550,000 tonne/yr cartonboard PM with IP at its mill in Yanzhou city, Shandong province.

He is behind the company's strategy to further develop into the biorefinery markets following on from its announcement last year to invest RMB 30 million in setting up a wholly owned subsidiary to make xylose, xylitol and related derivatives. Commenting recently in PPI he said: "Our industry will extend into the biorefinery area by tapping into dissolving pup as well as xylose projects. This is a big movement for us. Our

strategy is to implement cyclic development and to maximize the value of our industrial reach."

34. Marco Mensink, CEPI

Another member of the indefatigable CEPI team who deserves recognition on the RISI Power List is Marco Mensink, the association's deputy director general.



Always a valuable contributor to an event, Mensink is often seen around the world - and particularly in paper making hot spots of Europe - encouraging, informing and even goading producers into gearing themselves up for the bio economy.

Mensink works tirelessly on the seemingly endless challenges that the European industry has in front of it coming up with all sorts of plans and aides to help producers. The latest one is the Two Teams project which has been designed to identify new, breakthrough technologies in the industry in an effort to cut down on CO₂ emissions.

35. Hernán Rodríguez, Empresas CMPC

Plans are well underway for the company's \$2.1-billion, 1.3- million tonne/yr Guaiba II pulp mill project in Brazil. This will increase CMPC's capacity to 4.1 million tonnes/yr. Rodríguez call this a "milestone" for CMPC. The project will help double CMPC's market share of global pulp. The company's extensive woodland holdings have created a sustainable operation from a raw material aspect. It also benefits from being a low-cost producer for both hardwood and softwood pulp. Rodríguez sees 2013 with confidence as the company has

also started up its double-wide tissue machine at Talagante in Chile. CMPC is already the leading tissue producer in Chile, Peru, Argentina and Uruguay and has a growing position in several other Latin American markets.

36. Joseph Kruger II, Kruger

This family-owned company was formed in the early part of the 20th Century in Montreal and has since gone about its business quietly. Once known for newsprint, it was one of the first in the industry to tap into the energy sector and now Kruger Energy has 35 production plants producing 523 MW from hydro, wind, biomass and biogas. It still produces newsprint and was named a Gannett Supplier of the Year in 2012. Among its stable of newspapers, Gannett publishes *USA Today*. Never afraid to invest, the company took over the old Scott Paper assets and now enjoys great success in the tissue sector. It recently celebrated the startup of its new TAD tissue machine in Memphis, TN. It even has a wine and spirits division.

37. Aida Greenbury, APP

Aida Greenbury has appeared on the RISI Power List on a number of occasions, and is here again because she continues to go about her work as managing director of sustainability for APP with bullet proof enthusiasm and with the heart of a lion.



Greenbury has almost singlehandedly taken on the role of steering the Asian giant through sustainability issues that would make most industry executives' hair and

teeth fall out. This year all the hard work paid off with the recognition from the NGOs that was earnestly sought after the company very publicly announced an end to all natural forest clearance.

38. Chad Wasilenkoff, Fortress

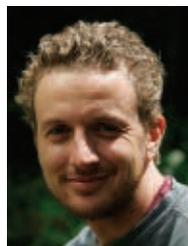
A consummate “new era” leader, a “contrarian investor”, Wasilenkoff continues to believe in the future of dissolving pulp. Despite some bumps in the road recently including lower prices, Fortress scored some extra cash when it sold its Dresden, Germany, specialty paper (wallpaper base) mill to Glatfelter. Fortress has now exited the specialty paper sector, concentrating on dissolving pulp and security paper. It will be interesting to see if the Thurso, QC mill can solve its operating problems and how the conversion of the Lebel-sur-Quevillon, QC, mill to dissolving pulp will come along.



39. Andy Tait, Greenpeace

Don't let the laid back, easy smile fool you. If you are cutting down trees anywhere near a tropical forest for making pulp - whether legally or not - it is highly likely that Tait or one of the team working with him will know all about it.

But actually the senior forest campaigner for Greenpeace is not often found in the forests himself. More often than not he is coordinating hard hitting campaigns against



deforesters from offices in Jakarta or London, using the all the sophisticated, urban methods of social media to name, shame and coerce perpetrators into submission.

Indonesia is the country of choice for recent (and upcoming activities against pulp producers), but Greenpeace is always actively looking for the next deforestation hot spot.

40. Disney

Disney's announcement of its new Paper Sourcing and Use policy is part of the company's ongoing initiative to demonstrate Disney's commitment to responsible forest practices and conservation. Its detailed guidelines, announced at the end of last year will be implemented in two phases.



The first phase will focus on paper sourced directly by Disney or on behalf of Disney for use in Disney-branded products and packaging, and the second will address paper sourced by the company's independent licensees.

Part of this new paper policy is working with NGOs to identify and prioritize regions with poor forest management and high rates of deforestation.

The company sought input from stakeholders throughout the supply chain and from the environmental community in the formulation of its paper policy and will continue to gain ongoing feedback as the policy is implemented.

The new policy continues Disney's legacy of supporting forest and nature conservation. Over the last two decades the Disney Worldwide Conservation Fund has invested in conservation programs in 112 countries, including more than 70 projects in Indonesia to protect the Suma-



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tran rainforest. Since 2009, Disney has also invested more than \$27 million in forest carbon projects in the United States, Peru, Brazil, Democratic Republic of Congo, and China.

41. IKEA

Evidence that the power of print still exists can be found on the pages of the legendary IKEA catalogue. Approximately 208 million copies of the catalogue were printed in fiscal year 2013 – more than double the number of Bibles expected to be printed in the same period.



Augmented reality was introduced in the 2012 edition with interactive content being accessed by scanning a symbol on the catalogue with a mobile device.

The company estimates that approximately 85 per cent of its packaging is made from recycled materials. During the 2013 financial year it plans to implement a consistent approach for sourcing paper and packaging across the IKEA Group.

42. Martyn Eustace, Director, Two Sides

Ensuring that the correct message about the sustainability of paper is put across is no small feat, considering the global growth of new media. Martyn Eustace of Two Sides hasn't let this stop him. He has been instrumental in campaign after campaign to push positive messages of the use of



paper from sustainable forests on brand owners, print specifiers, corporates and consumers.

Two Sides was launched in 2008 as an initiative by companies from the graphics communications supply chain including forestry, pulp, paper, inks and chemicals, pre press, press, finishing, publishing and printing. Eustace's passion for paper has been behind the launch of various campaigns including combating misleading environmental statements about paper, often made by companies to promote a cost saving initiative. Its most recent 'No Wonder You Love Paper' campaign was in major UK national and provincial newspapers and consumer and business magazines. Eustace has also been the driving force behind the opening of a Two Sides US branch, as well as ones in Australia and South Africa.

43. Mark Kerridge, group managing director Benson Group UK

Transforming an above average converting company into one of the most successful privately owned box converting/packaging manufacturing operations in the UK has appeared easy with Mark Kerridge at the helm. Approachable but determined he has led the company after being appointed in 2002 as managing director. From then on he has been responsible for the development of the organization from a single site business into a large, profitable multi-site group. Currently group managing director, he is responsible for developing and implementing the strategic plan for the business.



A significant part of the group's suc-

cess has been achieved through positive engagement with its employees and the development of a strong service culture. Producing packaging for many well-known brands in the food and healthcare sector, the company under Kerridge's leadership has won numerous accolades for its printing and converting capabilities. Combined with a strong equipment investment policy, Kerridge continues to push the company towards increased success.

44. Elizabeth de Carvalhoes, Executive President, Brazilian Pulp and Paper Association

Carvalhoes continues to play a pivotal role in the global position of the Brazilian Pulp and Paper Association (Bracelpa). Her role is to negotiate public and industrial policies that drive the growth of companies and the expansion of the industry's participation in global trade. Carvalhoes has also had an essential position regarding the communication of the good practices of pulp and paper companies on national and international level.



She has worked tirelessly to strengthen the industry's image and debate issues with government authorities and the National Congress.

45. Paul Herbert, Ilim Group

After working at the company for over six years, Herbert will see his current reign end on June 30th 2013. He has had nearly 47 years in the industry, spending 21 years at International Paper with his last six years at IP/Ilim in Russia.



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In six years, under Herbert's leadership the company reached strategic goals set out at the start of the joint venture and is currently completing the largest investment program in the industry of more than \$1.5 billion.

He has overseen extensive modernization of the company's facilities including a \$700 million project at the Bratsk involving a 720,000 tonne/yr pulp line.

Named *Global CEO of the Year* in the 2011 PPI Awards, Herbert's work spans almost every continent – such as Canada, Chile, Brazil, United States, Belgium, Germany, Spain, France, China, India and Russia – a truly global player. He has been instrumental on M&A activity globally, setting up and concluding deals worth \$5 billion.

46. Evercore Partners, H.I.G. Capital

Two equity firms that we have grouped together: Evercore assisted International Paper with its \$4-billion mega-acquisition of Temple-Inland in 2012. This is a financial firm that is well-connected; John Dillon, former IP chairman is senior adviser. H.I.G. Capital has connections and experience. Two former H.I.G. officials are now CEOs in the North American industry: Mike Patton of Carastar and Frank Papa of Newark Group.

47. Lynn Tilton

Tilton first made her mark in the industry when as CEO of Patriarch Partners,

she took over the Old Town mill in Maine. In 2011, Patriarch, a New York-based private equity firm, also purchased the Gorham, NH, mill that belonged to bankrupt Fraser Papers. Closed in 2010, the mill is running again, thanks to a conversion to tissue making. The conversion has helped put more than 175 people back to work. Plans are for Patriarch to invest another \$60 million to produce fine tissue. A Wall Street Journal article quotes Tilton as saying, "You have to find that one thing you cannot ship to China.....you have to find your niche."

48. Scott Poynton, TFT

The Forest Trust (TFT) was founded in March 1999 by Australian forester Scott Poynton to work with businesses across the supply chain, including major brands as well as producers. Basically TFT works with businesses to help them bring products to market. Poynton believes that deforestation is essentially a supply chain issue and works with companies to exclude any such products from the supply chain.

TFT is having some big successes with its supply chain sustainability model and continues to expand on a global basis working with big brands such as Nestlé and producers such as APP. Poynton says: "Businesses have to make money to make such commitments work and so TFT helps companies tell their responsible product stories in the hope that they'll make more money and employ more people by doing good business".

49. Emmanuelle Neyroumande, pulp and paper strategy manager, WWF International

Emmanuelle Neyroumande has been pulp and paper strategy manager at WWF International for over two years, during this time she has continued to ensure that WWF International's message is conveyed to the pulp and paper industry.

Building on her 14 years experience in international forestry, she has been forging partnerships with pulp and paper companies and engaging major retailers on sustainable wood product consumption.

50. Yang Yanliang, Shandong Bohui

Although still a relative newcomer to the paper industry in China, Shandong Bohui continues on the road of progress. It leapt up the PPI Top 100 by nine places last year at the rank of 85. The company hit the RISI news recently after starting trial runs on its PM 3 a 1 million tonne/yr coated ivory board machine at a greenfield mill in Dafeng city, Jiangsu province.

PM 3's output will be in the basis weight range of 300-350 g/m² and will be sold in domestic and overseas markets. **PPI**



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IT'S ALL ABOUT THE RETURN ON CAPITAL

By MARK RUSHTON , Editor

After over 50 years in the packaging business, PPI gets some words of wisdom from a seasoned industry player

PPI recently sat down with Dermot Smurfit, chairman of Powerflute Oyj, specialist packaging manufacturer with a mill in Finland. But what can the industry learn from one of the major players from the Smurfit dynasty, a family that has shaped the global packaging industry over the last 75 years.

The “Smurfit” name is without a doubt one of the most resonant in the global industry with

its reach being far and wide and in many shapes and sizes. But what eventually became the vast Smurfit empire of the early 21st Century evolved from very small beginnings in Dublin in the mid 1930s. And what was clear from the very beginning is that if you are going to empire build in the way the Smurfit dynasty has, then inquisitiveness, courage, adaptability and confidence must be in your DNA.

Smurfit relates the tale of the early beginnings: “My father (Jefferson Smurfit Snr), was a qualified tailor and started up a shop in St Helens, Lancashire in the 30’s. He soon realised there might be a more lucrative profession and so he bought a printing business in Dublin in 1938 and learned how to print. Then he realised that what was really in demand in the Ireland of the 1940s, was corrugated boxes. So he bought a book and built his own corrugator.”

Needless to say, in the early years the corrugated side of the business took off to such an extent that the local paper supplier to Jefferson Smurfit and his homemade corrugator took umbrage and refused to supply him with any more paper. “Undeterred, my father bought himself another book and learned how to make his own paper,” continues Smurfit. “He then built himself two 48 inch-wide paper machines and quickly developed the first milligator in the world - the paper came off the machine through a hole in the wall and went straight on to a corrugator.”

During the 50’s and into the early 60’s the business continued to grow very successfully following the tribulations of the world war in the 40’s with the resultant scarcity of raw materials.

The business, then known as Jefferson Smurfit & Sons Ltd, was ready in 1964 to take the next big step in its future growth strategy. It would go public to raise the necessary funding to build a new corrugated plant in Dublin.

Smurfit’s eldest son Michael joined the business in the early 1950s with the other three sons joining shortly after, Jefferson Jnr, Alan, and Dermot joining in 1961 as Mr Paper, and running the paper mill at the age of 22. “Those were amazing times in Dublin in those days. We had always seen wastepaper as our ‘urban forest’ as we had always

used 100% recovered paper as our raw material. At that time in Dublin, the rubbish dumps were witness to gang fights over who had the rights to them and there were no weigh bridges meaning all sorts of non-paper heavy items made their way into the raw material store.”

PHENOMENAL GROWTH SURGE

The early 60s saw the start of what was to become the Smurfit empire in terms of phenomenal growth. “My brother Michael took over as managing director in 1962, and later persuaded my father to go on a well-earned cruise. While he was away we knocked down the old paper mill and installed our first fordrinnier machine which could make around 30,000 tonnes/yr. At that stage, we were buying in a lot of paper for our converting operations and we badly needed to expand our paper production.”

The company then embarked on a wholesale growth program by acquisition over the next decades which saw it go from external sales of \$1 million and 10,000 tonnes/yr production in Ireland in 1964 to sales of \$8 billion, production of 13 million tonnes/yr – with a workforce of 78,000 in 38 countries in 2002. The company developed an acquisition strategy that seemed bullet proof; it would buy a minority stake in a suitable enterprise, watch it perform well, and then buy it out completely. “The early 90s were a time of boom and demand for boxes was huge,” says Smurfit, “We were quoting a year's wait for orders and getting paid up front! In 2002 we were the biggest paper based packaging company in the world, which happened almost all through acquisition, and in all that time we never built a new paper machine.”

The phenomenal rise and further evolving of the Smurfit group over recent times has been well documented, but from Dermot Smurfit's point of view, he retired from the business in 2002 when Madison Dearborn took the business private. “They were wonderful people,” he says. “But I was 58 and did not want to end up in a different reporting sequence to the one I had with my brothers over the last 40 years.”

NEW HORIZONS

Smurfit took a year out, but as with most entrepreneurially fired-up people, it wasn't long before he was back in the game, looking for new opportunities to get stuck into. After successful investment and management spells in various new ventures including electronic point of sale innovations and financial services, Smurfit popped up once again in the paper industry after he “and a few friends” bought Finnish company Savon Sellu after a chance meeting with the then M-real CEO Jouko Jaakkola. “At a dinner in Portugal, Jaakkola asked me what I wanted to do, I told him I wanted to buy unwanted assets. As it happens he had one.” explains Smurfit. “We bought Savon Sellu from M-real, improved it dramatically and then floated it in 2007 in the hope we could expand it by making further acquisitions.”

As it happened that float coincided with the financial crisis at the time, and the share price crashed disastrously from 100 pence down to 9 pence, however Powerflute, the name of the company that owns Savon Sellu, continues to forge ahead in the production of specialised semi-chemical fluting mainly used for the production of corrugated trays etc., an increasingly growing business for the transporting of fruit and vegetables.

So is Smurfit actively looking for new opportunities in the pulp and paper industry? “Always, and I have a number of possibilities I am looking at right now. Of course the industry will know of our last deal, the purchase and subsequent divestment of Scheufelen in Germany. The mill which produces 300,000 tonnes of coated wood free was in administration when we bought it in January 2009, saving over 500 jobs.

“We subsequently decided to sell it much sooner than we would have wished to a company with pulp assets since we believed this was the best way to protect the workforce from the effects of ever increasing pulp prices coupled to severe weakness in the CWF market.”

Smurfit also privately purchased the Pankakoski Mill from Stora Enso, renamed it Pankaboard

and after a couple of tough years that mill is now successfully producing some 100,000 tonnes of speciality boards.

What about the areas outside of the pulp and paper core? "At the moment we have on-going discussions about biofuels which we think could be increasingly important to us."

CHALLENGES AHEAD IN PACKAGING

But it seems that packaging is at the core of what makes Smurfit tick, and he is convinced that the area of sustainable fiber based packaging is a good one to be in for the future, he says: "Paper based packaging is winning the battle against plastic as people come to realise that paper is much more environmentally sound than a product that comes from crude oil that is not renewable".

But, of course, this is not all there simply for the taking and with regard to the future of fiber based packaging Smurfit says the industry must be realistic about the challenges ahead, saying there are three main areas of concern: "For wood based packaging papers the future looks very bright, although the price of wood could be an issue as government subsidies to produce green energy by burning the forests force wood prices ever higher.

"For the recovered paper based grades the situation is even more challenging as demand will rise for recovered paper and supply will be short in Europe and the US. This will lead to significant price increases and a loss of competitiveness to wood based grades.

"Finally, yet again, I can see overcapacity



The Savon Sellu mill, Finland

looming, but this time in packaging as graphics producers convert their machines to run packaging grades. Some of these will surely go bankrupt in the future (as in the past) and this challenge will turn into an opportunity for the big players over time."

WHAT LESSONS CAN BE LEARNED FROM THE PAST?

After a good half a century in the business as well as some time outside, what does Smurfit know for sure about this industry and what advice can he dispense? "I think we in this industry can learn from other industries how to be more

professional in our management of pricing. To do that means that we need to have fewer people with an engineering bias and more with a strong sales and marketing background. We need people who understand that you cannot price your product simply to fill a machine or a converting plant as this leads to serious underperformance.

"We need to move from a "let's build a big new shiny machine and hope there is a market" to a "what return will we get" mind-set. The fact is the pulp and paper industry is possibly the most sustainable in the world from an environmental perspective. If it could get its record on profitability right, it has the opportunity to be the envy of the world.

And would Smurfit do it all over again? "Of course I would! Personally the paper industry has been a very profitable one for me and my family, but actually more important than that has been the fantastic friendships that I have made with colleagues and industry players alike, that have endured over the past 50 years." **PPI**

A PPI SPECIAL REPORT

The products from Foshan Gaoming Hongyuan are sold to a wide range of customers, who expect a fast manufacturing cycle time

FRESH PAPER THE HONGYUAN WAY



Kenny Zhang, AFT representative in China and Tu Zhong Wen, production manager, Hongyuan, discussing the grade range from 60-220 g/m²

When you make 220 g/m² shopping bags in the morning, 70 g/m² colored paper in the afternoon, and 100 g/m² fine paper in the evening, fast, efficient grade changes are critical to success. At Foshan Gaoming Hongyuan Papermaking (Hongyuan), simplified wet end approach technology from AFT makes meeting the daily challenge of frequent grade changes possible (basis weights ranging from 60-220 g/m²).

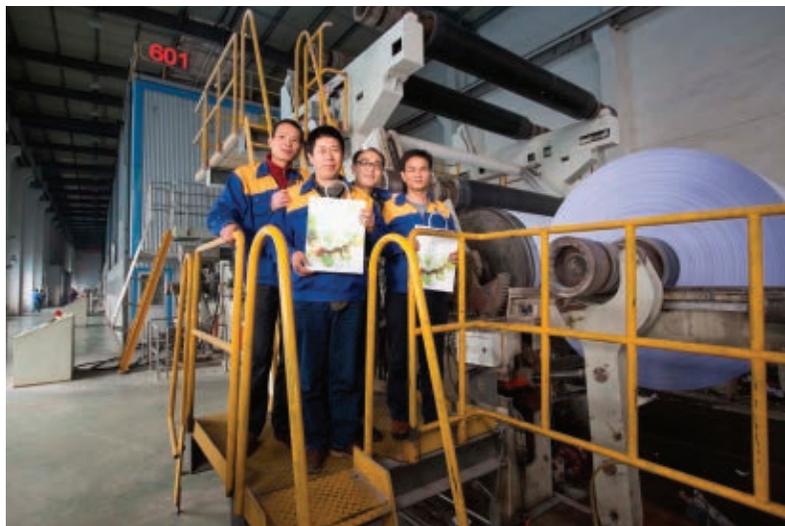
Hongyuan, located in southern Guangdong Province, China, produces 85,000 tonnes/yr on PM 1, which started up in January, 2011. According to Li Feng, general manager, "Our business demands flexibility in our people and our processes. Having a big warehouse with large inventories is not an option

for us, since our customers have such a wide range of needs. We need to make 'fresh paper' daily, just in time. That is the Hongyuan way."

"Frequent grade changes are the lifeblood of this mill," says Tu Zhongwen, production manager at Hongyuan. "We rarely run a single grade more than a few days. With the ability to be on-spec within two to five minutes between grades, our new wet end technology gives us the flexibility to rapidly adapt to customer orders."

SIMPLER IS BETTER

The POM[®] technology from AFT helps Hongyuan produce multiple grades from the same machine



Zeng Chenxing (left), Tu Zhong Wen, production manager, Kenny Zhang, AFT representative, and Hu Zhong, holding 220 g/m² shopping bags (top). Liu Youanjian, operator at the POMix unit (bottom).



efficiently and profitably. The technology adheres to a very direct POM benefit: Simple is better. The technology achieves its simplicity (eliminating tanks, seal pits, pumps, etc.) by removing the air and other gases early in the wet end process. With the air completely out, according to Kenny Zhang, AFT's representative in China, "Very little water volume is needed in the system, so this simplifies everything. And the system can be very responsive. Simplicity at the wet end gives operators greater control and confidence."

Zhang, who is also sales manager at Kaukomarkinat's Shanghai office, adds, "The POM system has fewer controls, because the process is self-adapting. Operators don't have to adjust it often for grade or grammage adjustments. A well-balanced system is a major asset for papermakers."

"We see a very clean sheet, and the process is stable," says Tu. "We do not worry about machine breaks, because we do not see them very often."

STABILITY EVEN DURING BIG SWINGS

"It's important for our wet end system to be fast and self-adaptive," says Zeng Chenxing, control and instruments engineer at Hongyuan. "With the low system volume in the POM technology, automatic controllers can respond quickly, easily keeping things on target."

Notes Tu, "Our operators can change the grammage tenfold, without a disturbance in the process. Making big grade changes quickly and easily adds to our profitability."

It was a Sunday in January 2011 when the POM system was commissioned with the first water runs. After only six hours, Hongyuan operators were able to put stock on the wire. Soon after startup, Hongyuan requested modifications to the original design to accommodate a wider range of grades, and more frequent grade changes. The aim was to minimize consistency variations in the thick stock, since this negatively influences the sheet profiles.

According to Tu, "After startup, we saw an opportunity to serve customers who want very high grammages. Our original plan was for a maximum of 120 g/m², which we now exceed. Some of the adjustments that the POM engineers made to their system

The centrifugal POMp Degasser removes gas from the whitewater. Forming section white waters are deaerated immediately, allowing the wire pit to be eliminated.



to help us achieve the high grammages actually improved the runnability of all our grades.”

TWO MINUTES UP AND RUNNING

“For colored grades, we need to stop, empty, and fill the stock chests and equipment,” says Tu. “But since the POM system operates with less than 20% of the volume of a conventional wet end system, we are up and ready to go very quickly. We do not have the thick stock mixing, machine chests, wire pits, silos, water tanks, and mechanical deaerators to deal with for every grade change, so our clean-up job is much less complex. In some cases, we only need two minutes to change the stock on the wire – including filling the chest, restarting the equipment, pumping water to the headbox, and putting stock to the wire.”

AFT’s project engineers produced a 3D model of the wet end approach system for Hongyuan so that everyone could visualize the positioning of the equipment and the piping runs. Details for placement of instruments and valves were decided ahead of time so there were no delays or mistakes during installation.

To simplify startup and ongoing operations, easy communications for operators was a high priority. Says Janne Andberg, POM process and equipment specialist, “Hongyuan was the first project where we used a ‘no language’ philosophy, because icons, numbers and pictures quickly communicate what is happening in

Key features of POM technology:

- Stock prepared “just-in-time”
- Air excluded
- Operating at high pressure
- Rapid process flows
- High paper machine efficiency with frequent grade changes
- Clean process supports product quality
- Energy, chemicals and freshwater savings

the process. Now we use this method globally.”

With its low system volume and airless approach, the POM technology does not have to recirculate and further clean stock several times before feeding it to the headbox. When stock is already clean, there is no need to clean it again.

According to Andberg, energy efficiency of a POM system is about 30% better than with conventional wet end systems, and defoamers and biocides are significantly reduced or eliminated completely. There are fewer components, smaller volumes, and less energy required for stock transport.

Washing intervals or system flushes are significantly reduced – about half as often as with a conventional system. The low effluent is another asset, minimizing

the load on the mill's water treatment systems. This comes from operating a cleaner system using less cleaning shower water and with fewer washing intervals."

Ongoing cost savings of the POM technology from less water, energy, and chemicals is considerable, providing a rapid payback for the mill. The POM scope of supply at Hongyuan included:

- POMix™ stock preparation system
- POMp™ degasser
- POMlock™ sealing drop leg
- Engineering design and support, logic diagrams for POM® system control
- 3D model of wet end approach and stock preparation system
- Engineering and construction with CEC (China Engineering Company, Changsha)

Says Zhang, "The POM system operates at a higher system pressure, which combined with the airlessness, makes pumping easier and more stable. This

is especially important for headbox pumps with high requirements and flows. This way the energy used for degassing is recovered in other parts of the process."

ANOTHER MACHINE

Hongyuan is in the planning stages for a sister machine, which would also handle a wide range of grades. The strategy to develop a diverse customer base is working well, and helps justify the investment in a second machine, according to Tu.

Comments Tu, "Our following a 'fresh paper' business strategy has attracted many repeat customers. The potential for growth is there, and we intend to capitalize on this opportunity." **PPI**



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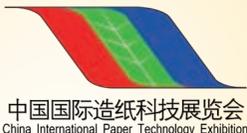
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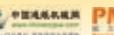
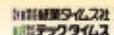
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By GRAEME RODDEN, Executive Editor

A rebuild of its PM 5 allowed SCA Ortviken to develop a new graphic paper designed for a range of printing processes

AHEAD OF THE CURVE



The Ortviken mill can produce 880,000 tonnes/yr of graphic papers including the new GraphoInvent

Very few traditional newsprint mills see a bright future for their product, particularly in western Europe or North America. SCA is no exception.

Rather than dwell in despair over the situation, SCA's Ortviken mill in Sundsvall, Sweden, developed a new paper grade in cooperation with SCA R&D Centre, that is called GraphoInvent.

Sales and marketing manager Jan Knuts explains that a project that was started about three years ago to identify what should be done to make best use of the mill's comparative advantages with a virgin fiber TMP based production. It was decided to go for a super bright and bulky paper that could compete with uncoated woodfree papers. The decision to invest came in October 2011 and then, Knuts adds, "The intensive work started."

The Ortviken mill produces 880,000 tonnes/yr of graphic paper: 490,000 tonnes/yr of lightweight coated and 390,000 tonnes/yr of news and improved news. There are four paper machines: PMs 1 and 4

produce LWC; PMs 2 and 5 produce news and uncoated offset (improved news).

EVERYTHING ON THE TABLE

The realization that SCA Ortviken's present products approached the end of their life-span triggered intensive development work at Ortviken and supporting units such as SCA R&D Centre. For the long term development, no ideas were too brave nor far-fetched, from "green chemistry" to packaging and construction materials.

"We worked with the equipment and raw materials and found that we were able to produce a high bright paper with very good bulk and printing properties, a product that could become competitive on an otherwise declining market," Knuts explains. SCA is not afraid to allocate resources to develop and bring new products to the market.

Short-term the plan was to reduce the exposure to standard newsprint and to develop new and

Eye on the environment

The environment has always been in the forefront of any of SCA's investments as has been amply demonstrated in past issues of *PPI* (April 2005, August 2007, January and April 2013). Along with the improvements of the effluent treatment system to handle the increased COD load, the mill at Ortviken has significantly reduced its oil consumption by 98%, from 100,000 tonnes/yr to 2,000 tonnes/yr. Biomass use for energy is also increasing.

Despite the economic downturn, Knuts says customers still place a lot of importance on proper

stewardship of the environment. Currently, about 25% of Ortviken's total sales are FSC certified. He adds that the carbon footprint for the mill's GraphoLux (standard) LWC paper is lower than any of its competitors worldwide.

In late 2012, the mill applied for the EU Flower designation, which is designed mainly for publication paper with specifications for chemical and fuel use, among a number of other factors. Knuts notes that the mill's newsprint is not eligible for the Flower, as the standard promotes recycled raw material and demands a minimum of 70%.

competitive publication paper grades. The plan was so convincing that SCA allocated 350 million Swedish kronor (\$52 million) to the rebuild of PM 5 to allow for the production of GraphoInvent and other super bright and bulky grades.

"We call it an uncoated offset with super bulk and high brightness for cold set web offset (CSWO) and heat set web offset (HSWO) printing, Knuts adds." Furnish is TMP and filler.

Developing the new grade was not just a case of tinkering with the furnish. It involved many of the primary mill processes. About 30% of the cost was devoted to the rebuild of PM 5 to allow it to produce GraphoInvent in higher grammages. Although some extra tonnage can be produced, the rebuild was directed at improving the quality and developing new qualities of paper that PM 5 can make. For the foreseeable future, newsprint will remain one of the qualities produced PM 2 has been used as a test machine to produce GraphoInvent. Built in 1958, PM 2 is used increasingly as a test machine for new grades. Other products are under development and SCA is working with customers. SCA hopes to have more new products ready to roll out in late 2013.

The focus of much of the rebuild for PM 5 was on the wire and press sections. PM 5 was limited in drying capacity and this had to be corrected as a super bright and bulky furnish is important for GraphoInvent. Two-sidedness was also reduced.

Vacuum boxes were installed in the wire section

to increase drainage. The suction press roll is now 100 mm wider and has a polyurethane cover, again to help dewatering.

In the dryer section, the exhaust fans were replaced as was the roof on the hood.

Changes to the bleaching process accounted for about half the cost of the project. Two new roll presses and a new bleaching tower were installed. The revamped bleach plant started up in October 2012 and early results were very promising.

Finally, because of the increased brightness, the mill's COD load increased so the rest of the money was spent improving the mill's effluent treatment system.

Metso carried out the machine rebuild. Other work was done by Andritz, Procerco, KWM, Invent and Siemens HV-Turbo.



The Ortviken mill is just outside of Sundsvall

The new TMP line was opened in 2009



In 2009, the mill also started its new thermomechanical pulping line, increasing production from 1,600 tonnes/day to 2,500 tonnes/day.

A RARE DEVELOPMENT

GraphoInvent is available in a basis weight range of 54 to 70 g/m² with an ISO brightness of 83. Knuts explains that for SCA to make the necessary investment, the mill had to show a strong upside. “With the bleaching, we have an opportunity to make more bright and bulky products, but we have also developed a new quality, which is rare in Europe.”

Knut believes the quality is such that customers can save money by replacing more expensive grades such as LWC, MFC some SCs and uncoated woodfree. By replacing LWC, it may sound like the mill is competing with itself. But, Knuts points out, it is mostly recycled LWC grades that GraphoInvent is targeting. Still, he adds that the mill can offer an alternative rather than lose a customer who is looking to save money.

“Over the last year, there has been a tremendous downgrading in substance and quality,” Knuts says. “Everyone is looking for a cost saving. Bringing a totally new quality like this takes time. We started in early 2012 and large-scale trials took place in September.”

The main target market is printed products with a relatively short lifetime (e.g. advertising circulars) although Knuts adds that the mill is open to all end uses. “We can compete with uncoated woodfree papers.”

Another segment where Knuts believes GraphoInvent can succeed is in comic books. “We are a good and more cost efficient alternative to MFC.”

Trials have also been conducted with an upscale fashion magazine. Compared with an uncoated woodfree, Knuts says GraphoInvent has a higher bulk so publishers can go with a lower basis weight and thereby saving money.

Always an innovator, SCA went against the grain. Knuts says that the company will be in the publication papers sector for the foreseeable future. But, as demand and consumption in the developed world sag, most producers tend to lower costs to stay profitable. “At SCA, we did the opposite. We invested to improve quality and find new grades.”

In October 2012, SCA launched GraphoSilk. This single coated mechanical grade can replace double-coated woodfree. First available in a basis weight range of 75-90 g/m² with 35% gloss, a 70-g sheet is being introduced in 2013.

With its large TMP plant, Knuts says that as prices for chemical pulp increase, Ortviken has an advan-



The focus of the rebuild was on the wire and press sections



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tage over many of its competitors. "As consumption declines in most grades, the price gap between qualities is low. Customers can migrate upwards at a relatively low cost or move down because quality is almost the same. The general trend is downwards to save money."

Even with the development of new grades, in the near future, Ortviken will continue to make newsprint, as it continues to develop its existing product range. "As long as we have our core group of customers in northern Europe and it is profitable, we will continue to make newsprint. We are not leaving the market. We do see a long-term decline in newsprint consumption, perhaps towards zero, but that is many years away."

SCA has not set any production targets for GraphoInvent. It depends upon customer demand. The mill's main market is Europe but it does not intend to limit itself. Knuts mentions that there is a potentially large market outside of Europe.

With several trials with "chosen" customers completed, the next step is to develop separate categories for GraphoInvent. Cold set has been done; heat set is next.

Looking to the future, Knuts is confident. "We will be here for many years. The SCA board has invested money and confidence in us. It is now up to us to demonstrate that we deserve that confidence." **PPI**



ALWAYS AN INNOVATOR

The Frohnleiten mill made its first board in 1913

By GRAEME RODDEN, Executive Editor

With a rich history to look back upon, Mayr-Melnhof Karton's Frohnleiten mill has new innovations of which to be proud

Although founded 125 years ago, the Mayr-Melnhof cartonboard mill in Frohnleiten, Austria, can trace its roots back to the Hans Mayr family in the 1400s. And, in an era where mergers and acquisitions are an everyday occurrence, the mill has belonged to the same family that entire time.

Hans Mayr had his start in the hospitality industry and only branched out into industry in 1815 with a venture in coal mining.

The family's venture into the forest products industry began in 1888 with the building of a sawmill and mechanical pulp mill. The company has been an innovator since its early days. It was one of the first mills to use secondary fiber when it installed a solid board machine in the 1960s. (It was shut down in 1984.)

These days, the mill produces close to 500,000 tonnes/yr of recycled coated board on two machines, BM 2 and BM 3, mixed Andritz

and Voith units respectively. The mill's desire to innovate has not stopped with time. In 2010 (June 18 at 09:30 to be exact), the mill started up the world's first online curtain coater for recycled cartonboard on BM 3. Installation took fewer than two weeks. Previously these types of coaters had only been used on photographic papers and carbonless papers mainly.

Mill director Gernot Schleiss says there are a few reasons why Mayr-Melnhof Karton opted to choose something new. The first was to improve opacity. Also, the machine's old air knife coater had a speed limit of about 600 m/min. By being able to increase solids content on the web, energy consumption has dropped.

Since startup, Schleiss says the new coater "worked straight away and has run well." Existing products have shown improvement, especially printability. "We can see visible improvement on the surface," he adds, "and there has been great customer reaction."

The crews were involved with the curtain coater project from the beginning and they were "on board early", according to Schleiss in their support of the project. "They had to learn to work with the new technology to achieve our standard of close to 100% run time."

Schleiss cannot give enough credit to the employees. “Frohnleiten is a dynamic mill in a dynamic company with a dedicated workforce. The managers of the departments are like entrepreneurs, running their departments independently, always striving to be better.

“As a whole, it makes for a successful company, even in a difficult economy and in a European environment that is not always friendly to industry.”

There are 550 employees at Frohnleiten, with an average length of service of close to 20 years. The mill has many third generation employees. Schleiss makes it a point to meet every new employee before he/she starts work. “Everyone is part of our success. They are motivated and interested.”

BUILT UP OVER THE YEARS

Although mainly a recycled mill, Frohnleiten does have a 50,000-tonne/yr refiner mechanical pulp (RMP) line that uses chips produced in family-owned sawmills (see boxed copy). This is mostly spruce and used in the middle layer of the some of the mill’s grades.

The mill also purchases about 20,000 tonnes/yr of chemical pulp for certain board grades.

The bulk of its pulp comes from 450,000 tonnes of secondary fiber that it buys annually. This is a mix of post industrial and post



Mayr-Melnhof purchases 450,000 tonnes/yr of secondary fiber

consumer mixed waste paper including OCC, 20 different grades in all, although no ONP. It is sourced from a 200-300 km radius, which takes in the cities of Graz and Vienna. At any given time, there are 20,000-30,000 tonnes of secondary fiber on site.

The higher quality grades are used in producing the outside layer of board as the mill does not have a deinking process. The quality of available secondary fiber is dropping, which necessitates the use of virgin pulp. The company used to have its own collection business but divested it at the end of the 1990s because it realized it had no “hedge” even though it was trading about one million tonnes/yr.

The mill has a flotation process for its furnish and there is no deinking. The system has been built up over the years, says Schleiss and all major suppliers are represented in the mill.

A family affair

As noted, the foundation of Mayr-Melnhof goes back almost 600 years. Today, there are two main branches of the family. One is based in Salzburg and the other in Graz (Styria). It is the latter branch headed by Franz VI Mayr-Melnhof-Saurau that leads the mill. Both sides of the family are represented on the supervisory board of Mayr-Melnhof Group

The company is one of the largest land owners in Austria. However, as mill director Gernot Schleiss says, the mills are at “arm’s length” from one another and the Frohnleiten mill receives no discounts on its

chips from the Mayr-Melnhof sawmills.

The company continues to spread its wings. Along with its seven cartonboard mills in continental Europe (three in Germany, two in Austria and one each in The Netherlands and Slovenia), Mayr Melnhof Karton recently moved further afield purchasing the Follafoss, Norway, CTMP mill from Södra Cell in late 2012. The 105,000-tonne/yr mill will produce pulp for Mayr-Melnhof’s board mills.

On the packaging side, it has also purchased South American folding carton manufacturers in Chile and Columbia.

**The Frohnleiten mill
enjoys picturesque
surroundings**



The mill makes seven types of cartonboard and basis weights range from 230 to 450 g/m².

Built in 1951, BM 2 could produce 15,000 tonnes/yr at startup. It has been rebuilt almost entirely since. Funding to build the machine came from the Marshall Plan following World War Two. Now, it turns out more than 150,000 tonnes annually.

BM 3 started operation in late 1971 and has also undergone rebuilds. It has four headboxes with a DuoFormer for the middle layer. The four layers are: top, under, middle (50% of the weight) and the bottom. There is a three-press configuration on the machine.

There are pre-drying cylinders, a Yankee dryer responsible for the smoothness of the top layer followed by final drying. The top layer receives three coats with the reverse being coated in between. Calcium carbonate and clay are the coating materials used.

BM 3 produces grades with a basis weight range of 230 to 320 g/m², but it can go up to 400 g for some special grades. The mill produces about 85% sheets and 15% rolls. BM 3 has six sheeters; BM 2 has three. There is very

little inventory as the mill tries to produce to order.

MEETING CUSTOMER REQUIREMENTS CONSISTENTLY

For printing purposes, customer demands nowadays focus on reducing the number of washing intervals. Schleiss says they want more than 20,000 sheets to go through the press before washing. Better printability is also a frequent demand. And, the mill must do all this while taking into account the faster speed of modern printing presses. Product consistency is also important.

But, Schleiss adds, this is where Frohnleiten excels. "We deliver on time to the tightest parameters, although we do produce to our own standards and we are consistent. Our variability is very low."

End uses for Frohnleiten's board are mainly food applications although the pharmaceutical sector is taking an increasing amount. "More and more they are going to recycled board," Schleiss explains, "because they feel it goes hand in hand with the rise of generics."



Mayr-Melnhof installed the world's first on-line curtain coater for recycled cartonboard on its BM 3



Big name customers include Kellogg's, McDonald's, P&G and Unilever. The mill exports to 110 countries although the bulk of its business (67% of production) is in Europe, including Eastern Europe.

ANOTHER INNOVATIVE SOLUTION

The concern about mineral oil leaching into packaging prompted Mayr-Melnhof Karton into more research about five years ago. MMK's R&D center is in Frohnleiten. As part of a multi-million Euro investment, within the last two years, the Frohnleiten mill developed a new board, Foodboard™.

"This is a worldwide invention by us that provides a complete barrier against mineral oil migration," Schleiss states.

This has already been successfully confirmed by comprehensive long-term tests with major food manufacturers under real conditions. (packing and printing lines). Mineral oil migration was measured exactly and Schleiss knows the mill is under any proposed limits.

A second curtain coater will need to be installed on the reverse side of BM 3 to get commercially ready. "Whenever legislation is passed setting limits on mineral oils, we will be able to supply Foodboard into the market,"

Schleiss adds. He expects legislation will be passed in Germany within a year.

The developments do not stop there. Mayr-Melnhof is developing a "digicarton" product: a recycled grade that can be used for digital printing. A new grade, Flexoliner, is designed for flexo printing.

Even the effluent treatment process has a twist. The mill has a first stage anaerobic process followed by two stages of aerobic treatment. The resulting sludge, combined with sludge from flotation, is turned into a fluff-type biofuel used to dry bricks. The sludge reacts to help dry the bricks and give them porosity. Mayr-Melnhof Karton was awarded the Neptun Environmental Award for this innovation.

"Capital has always been invested when it's been needed," Schleiss explains. "Continuity in improvements keeps up the company's resilience wherever the cycle turns."

Since the beginning of the 20th Century, Frohnleiten has been known as an innovator, first for its production processes and now, Schleiss says, for its innovative customer orientation, both service and products. **PPI**



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By IAN LIFSHITZ

Water conservation at APP's Jinhai facility was designed as a key requirement to its operation

STRIVING TO SET THE STANDARD



APP's Jinhai mill, Hainan Island, China

Asia Pulp & Paper (APP) is one of the world's largest paper companies and to achieve this massive scale has involved a lot of innovation and investment in advanced paper making facilities. A stand-out among APP's facilities is its Jinhai facility in Hainan, China. This facility is the world's largest single line pulp mill and houses the world's largest paper machine.

While scale and speed are frequently highlighted to enable more efficiency with one plant rather than many, one core environmental improvement is the water conservation achieved through innovative water treatment technology. Water is a critical component in the production of paper, required at nearly every step of the process. Traditionally, pulp and paper mills have been among the heaviest industrial water users. But water scarcity is a quickly

growing problem in China and in many parts of the world, and companies like APP must find ways to drive down water intensity to maintain access to this precious resource.

BENEFITTING FROM ADVANCED MACHINE TECHNOLOGY

As paper making technologies evolve, modern paper making machines are designed with water conservation in mind. The Jinhai facility's PM 2 machine is a case example of this. PM 2 stretches 428 m in length, and can produce a coated paper roll 3.5 m in diameter, 11 m in length, and weighing approximately 90 tonnes in 30 minutes. It achieves this while requiring an average of five liters of water per kilogram of paper produced, putting it well below the Chinese

government's maximum allotment of 10.5 liters or the European average of eight liters—a standard that fares better than other global production markets.

WATER SAVINGS AT ITS CORE

The Jinhai facility was designed and built with water conservation as a key requirement. Rather than the more traditional diffuser wash press, the Jinhai mill only uses an advanced compact press in the pulp separation process. The compact press lowers water use by 7.1 tonnes per tonne of pulp produced, with daily water savings of 23,430 tonnes, and annual water savings of 8.2 million tonnes.

The facility also collects condensed water from public pipe racks used in the multi-fuel boilers, amounting to water savings of 600 m³/day. Condensed water, collected from chlorine dioxide plant steam and re-used in the facility's chemical preparation department, yields an additional daily water savings of 660 m³.

Collecting sealing water from all production stations for re-use for spray felt helps conserve another 3,500 m³/day of water. The use of "backwashed" water from the cooling towers to wash the facility's limestone system in the re-cauterizing process generates a daily water saving of 66 m³.

EXTENDED ENVIRONMENTAL BENEFITS OF WATER TREATMENT TECHNOLOGY

To further complement its water conservation strategies, the Jinhai facility treats on-site waste water using intense chemical, biological and advanced oxidation processes. The final step in the waste water treatment process are three on-site water clarifiers – two of which are 34 m in diameter, and another 48 m in diameter, each capable of treating 18,000 m³/day and 36,000 m³/day respectively.

The treated waste water is either reused (to keep the system in balance) or simply discharged. To demonstrate the effectiveness of the facility's waste water treatment process, the facility started a fish breeding project with treated waste water in 2004, its second year of operation, with the breeding and growth of all

fish proceeding normally over the following nine years.

LOOKING AHEAD

Efficient water conservation and advanced water treatment is a top priority for Asia Pulp & Paper to maintain continuous improvement in water conservation.

Research and development investments in water conservation and water treatment have generated patents for the Jinhai plant's de-mineralizing treatment system and the resin loading device. Looking ahead, the company is currently constructing a new paper production waste water recycling system capable of reusing up to 83% of the facility waste water.

Since coming online, the Jinhai facility has monitored its water usage and conservation trends, leading to further production and operation upgrades to maximize conservation and usage efficiency, which have effectively minimized overall water consumption from 32 m³/tonne of pulp in 2005 to 24 m³/tonne.

To assure APP's access to best practice sharing in water conservation, the Jinhai facility, along with five of APP-China's major mills (Gold East, Ningbo Zhonghua, Ningbo Asia, Gold Huasheng and Gold Hongye), became one China's first pulp and paper companies to pledge a global commitment to the UN CEO Water Mandate.

To date, the 110 million tonnes of water saved at APP's Jinhai facility is testament to APP's commitment to waste water reduction and water conservation. But that is just a start. While the Jinhai facility may currently serve as an exemplary model of what is possible for the pulp and paper industry, the company must strive to maintain this position. Fortunately, the possibilities of greater water management efficiency never ends. **PPI**

Ian Lifshitz is the Sustainability Director for the Americas, for Asia Pulp & Paper Group (APP). He is responsible for leading the company's sustainability and related stakeholder engagement programs across Canada, the United States and South America.



Ian Lifshitz



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A PPI SPECIAL REPORT

Clariant Paper Business becomes Archroma: Embracing the future under new ownership

NEW NAME, SAME COMMITMENT

The paper industry is no stranger to change. Changing demands, overcapacities, trend towards sustainability and environmental considerations, each brings its own challenges to the paper business.

In the midst of this climate, Clariant also needed to adapt priorities in order to face new challenges. The December 2012 announcement that its Paper Business Unit would be sold, along with its Textiles and Emulsion businesses, to SK Capital is the latest development to continue its strategy of value creation. SK Capital is no stranger to the world of chemicals and manages a US\$7 billion portfolio with a clear focus on the specialty materials, chemicals and healthcare sectors. As of October 1, 2013 Clariant's former paper business will serve its customers under the new brand Archroma®.



Helmut Wagner, Clariant's Head of Business Unit Paper Specialties, says new ownership is set to strengthen its already strong commitment to the paper industry. Photo courtesy of Clariant

under new ownership, and will operate under the new name Archroma, our commitment to serving our customers will remain as strong as ever. We are one of few companies to offer papermakers the complete range of colorants and we see ourselves as the experts in the management of whiteness, coloration, special coatings and strength for all types of paper. While our focus, contacts and production sites remain unchanged, products and processes will be further improved to offer advanced solutions to the paper industry."

Wagner continues: "By combining our product range with the application services of our paper experts around the world we work to enhance both the optical and functional properties of paper. Additionally we continuously strive to optimize production processes for our clients as cost reduction is a very high priority for the industry."

ESTABLISHED COMPETENCIES

Clariant has a long history as a colorant supplier to the paper industry, dating back to 1886. Innovating around its paper products and services based on listening to market needs has always been a trademark of the company's approach. Papermakers around the world place high value on its core competencies of coloration (dyes and pigments), whiteness (optical brighteners) and selected surface and process chemicals, underlined by its customer emphasis and combination of reliability, technical expertise and innovation.

Helmut Wagner, Clariant's Head of Business Unit Paper Specialties, explains how new ownership is set to strengthen its already strong commitment to the paper industry. "Although Clariant's paper business will be

PRODUCT SAFETY AND SUSTAINABILITY

Besides working with its customers to reduce production costs, Clariant is committed to supporting customers in their efforts to improve the sustainability of their own products and processes.

The Cartaspers® PSM deposit control innovation is one example. The nonionic, readily biodegradable (OECD 301 A 97% - 28 days), hydrophilic polymer practically eliminates downtime due to "stickies" contamination, and the amount of hydrocarbon cleaning solvent for dissolving and removing the contaminants is reduced by up to 90%. Clariant's patented Cartaspers® PSM liquid is easy to use. It is added to the shower water during the paper produc-

tion process and adsorbs on the machine clothing to provide a repellent protective layer. This allows the “stickies” to be rinsed away before they can build up and contaminate the fabrics.

Clariant is at the forefront of REACH registration for its optical brighteners (OBAs) and other paper chemicals. Its entire range of Leucophor® OBAs on general sale in Europe comprises substances which are fully-registered under REACH. The first phase of REACH (Registration, Evaluation, Authorization and Restriction of Chemical Substances) was completed at Clariant in November 2010. Clariant registered the remaining active substances of its Leucophor® range well ahead of the REACH Phase Two deadline in 2013.

Clariant also offers more than 140 dyes, OBAs and chemicals which carry the “EU Flower” ecolabel.

A similar number of products are compliant with Nordic Swan. Many products have also been developed in line with standards and recommendations for food contact applications (FDA and BfR).

“Product safety is of the utmost importance, and being able to pass on this assurance of compliance to our customers is critical to supporting their sustainability and regulatory commitments,” adds Wagner. “In achieving full registration under REACH for example, we are ensuring the long term future availability of product ranges that our customers value. Making significant investments in the area of safety is fundamental, in the same way that we invested on the production front to keep our products close to our customers and at the cutting-edge of technology.”

STRATEGIC INVESTMENTS IN SITES

In 2009 and 2010 Clariant implemented major restructuring to improve its profitability. During the restructuring project GANO (Global Asset Network Optimization) all its production sites were reviewed with regard to profitability.

“Our European paper customers appreciate a reliable supplier with regional production, which is essential for bulk products like optical brightening agents. Clariant therefore moved the production for most paper products to Prat in Spain,” comments Wagner.

“During this transfer several millions were invested in Prat to create state-of-the-art production facilities.”

Recent production and logistic-related developments will continue to enhance the company’s global footprint into the future. The Martin production site near Savannah, GA, is dedicated to the paper business. For many years this site has been the key plant in the US for the production of optical brightening agents and paper colorants and is the largest producer of OBAs in North America. Clariant’s production site in Resende, Brazil, is also designated to Business Unit Paper Specialties and offers a strong production base in Brazil, which also serves the other growing markets in Latin America.

“As the Paper Business is to be divested along with two other Business Units to the same new owner,

these three will become one new company,” clarifies Wagner. “This will enable us to leverage the production sites of the other Business Units Textiles and Emulsions. One good example is the production site in Tianjin, Northern China, assigned to Business Unit Textiles, where colorants and chemicals for the Asian paper markets are also produced. This will ensure that we can continue serving both local customers and global key accounts with the same products and services. In total Archroma will own 25 plants around the globe.”



It is the technique that makes every piece of paper a piece of art. Photo courtesy of Clariant

FUTURE OUTLOOK

With a solid organizational and manufacturing basis in place ahead of its transfer to new ownership, Helmut Wagner sees a strong platform for further value creation for customers.

“Under SK Capital, papermakers can look forward to Archroma continuing to use our technical expertise to deliver reliable, sustainable innovations at the forefront of improving manufacturing efficiency, carbon footprint, and the performance and enhanced environmental-compatibility of paper and board,” concludes Helmut Wagner. “Despite the challenging market environment, we are committed to the industry and to supporting a brighter future for us all.” **PPI**

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RISI VIEWPOINT

A brief introduction of the Chinese graphic paper end-use market - commercial printing sector



By Li Meng, Economist, Asian Graphic Paper, lmeng@risi.com

THE COMMERCIAL printing sector, which includes catalogs, directories, inserts, direct mails and other types of promotional and sales materials, began growing as a graphic paper end-use market in China just in the past decade. After fairly slow development in the first five years (2001-2005), its growth rate almost doubled to 4.2%, driven by the solid improvement in China's real estate market and car sales resulting from the country's healthy economic development. Nevertheless, it is still only about half size of the European market and just over one-third of the size of the North American market. The total commercial printing market in 2011 reached about 4.2 million tonnes, an 800,000 tonne gain from 3.4 million tonnes in 2006.

Although the commercial printing sector uses all types of graphic paper grades, from standard newsprint to triple-coated woodfree paper, the dominant grade in 2011 was coated woodfree, with a market share of 52% or 2.2 million tonnes, followed by uncoated woodfree at 35% or 1.5 million tonnes of paper. Mechanical printing & writing grades have a share of around 11% in total, or a total volume of around 500,000 tonnes. This is quite small compared with shares in the European market (38% or 3.1 million tonnes) and the North American market (53% or 5.7 million tonnes). A very small portion (less than 2%) of newsprint is used in this end-use sector.

Fast growing segment

Out of all of the commercial print media end uses in China, inserts and flyers have been one of the fastest growing; paper consumption in this category accounted for nearly one-third (1.3 million tonnes) of the paper consumption in the commercial print media end use in 2011. Inserts and flyers have increasingly been used by advertisers in national and regional newspapers as well as in magazines. This category covers a wide range of different paper grades, including both woodfree and mechanical, but is mainly dominated by woodfree paper, which in total comprises roughly 85% of this market segment. Inserts and flyers are considered by advertisers to be a cost-effective way to reach a specific geographic area. However, this sector will be influenced by many of the e-media and

other market factors, and retailers will increasingly try to reach their target group through non-print media, like smartphones and media tablets. We expect paper consumption in inserts and flyers to continue to rise in the next decade, although its pace of growth will decelerate due to negative effects from e-media.

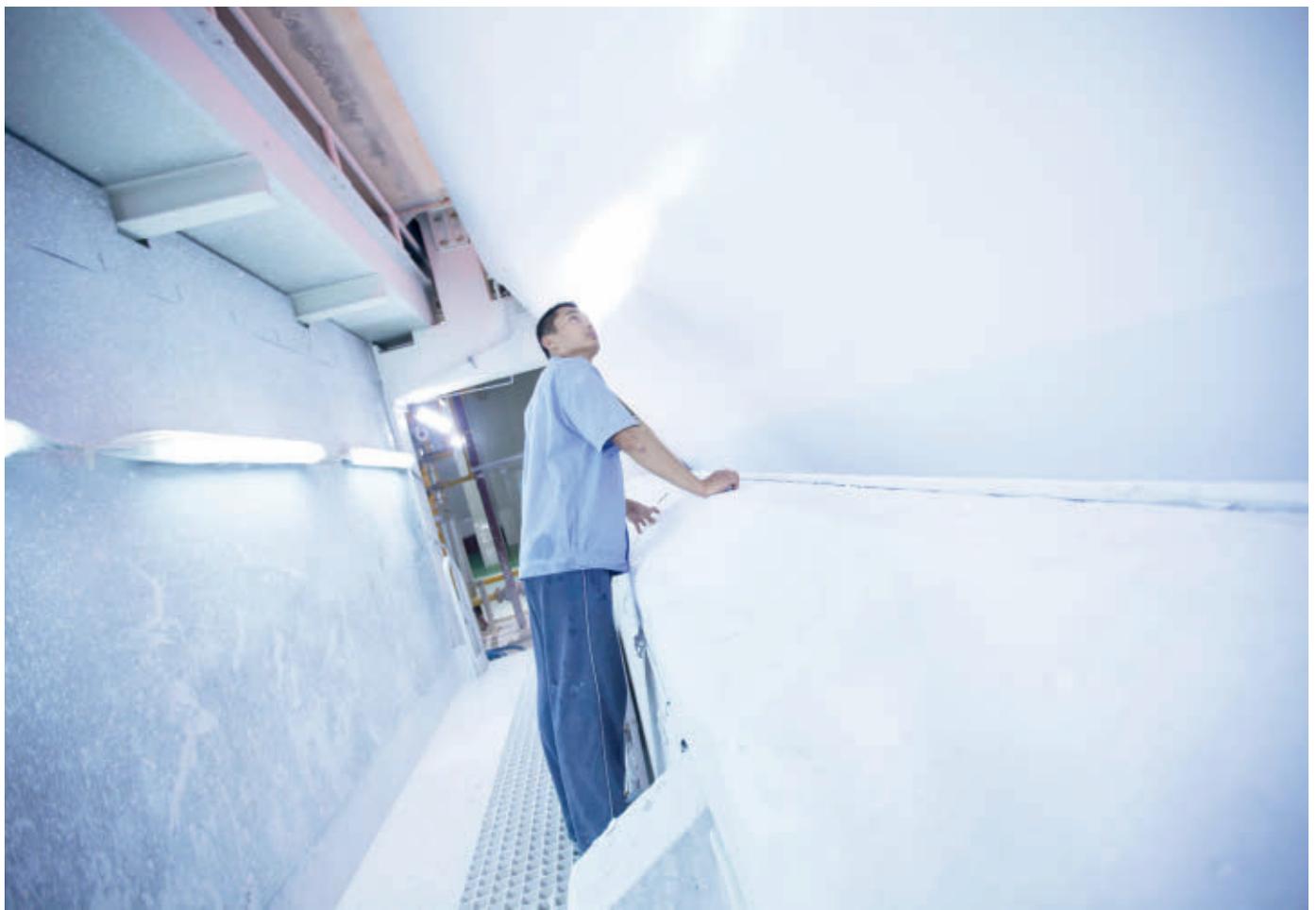
Catalogs represent another big category in the commercial printing segment. They are popular due to their abundant information, fine printing and long-time preservation. Because white-collar employees usually have more income but less time to shop, catalogs are preferred for information collection.

We expect paper consumption in catalogs to continue its upward trend, as catalogs are a convenient way for people to shop, especially white-collar employees. But there are potential downside risks for paper use as mail order companies or producers will increasingly use both print and electronic formats of catalogs to drive sales, and catalog publishers could direct more dollars into online and mobile efforts. In addition, there could be a drop in the average size of the catalog in terms of page count and trim.

All other commercial printing applications other than inserts, flyers and catalogs consumed about 2.3 million tonnes of graphic paper in 2011, including directories, instruction books/sheets, advertising/promotional posters, brochures, coupons, maps, tickets and travelling guides, etc. We expect paper consumption in the commercial printing end use to be the fastest growing end-use market for graphic papers in the next 10 years, with coated mechanical papers gaining slightly in market share at the expense of the woodfree grades despite the fact that electronic media will erode all print advertising media. Because of the support of a healthy Chinese economy and growing real estate and car sales segments, commercial printing demand is expected to be held up well over the next decade. **PPI**



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