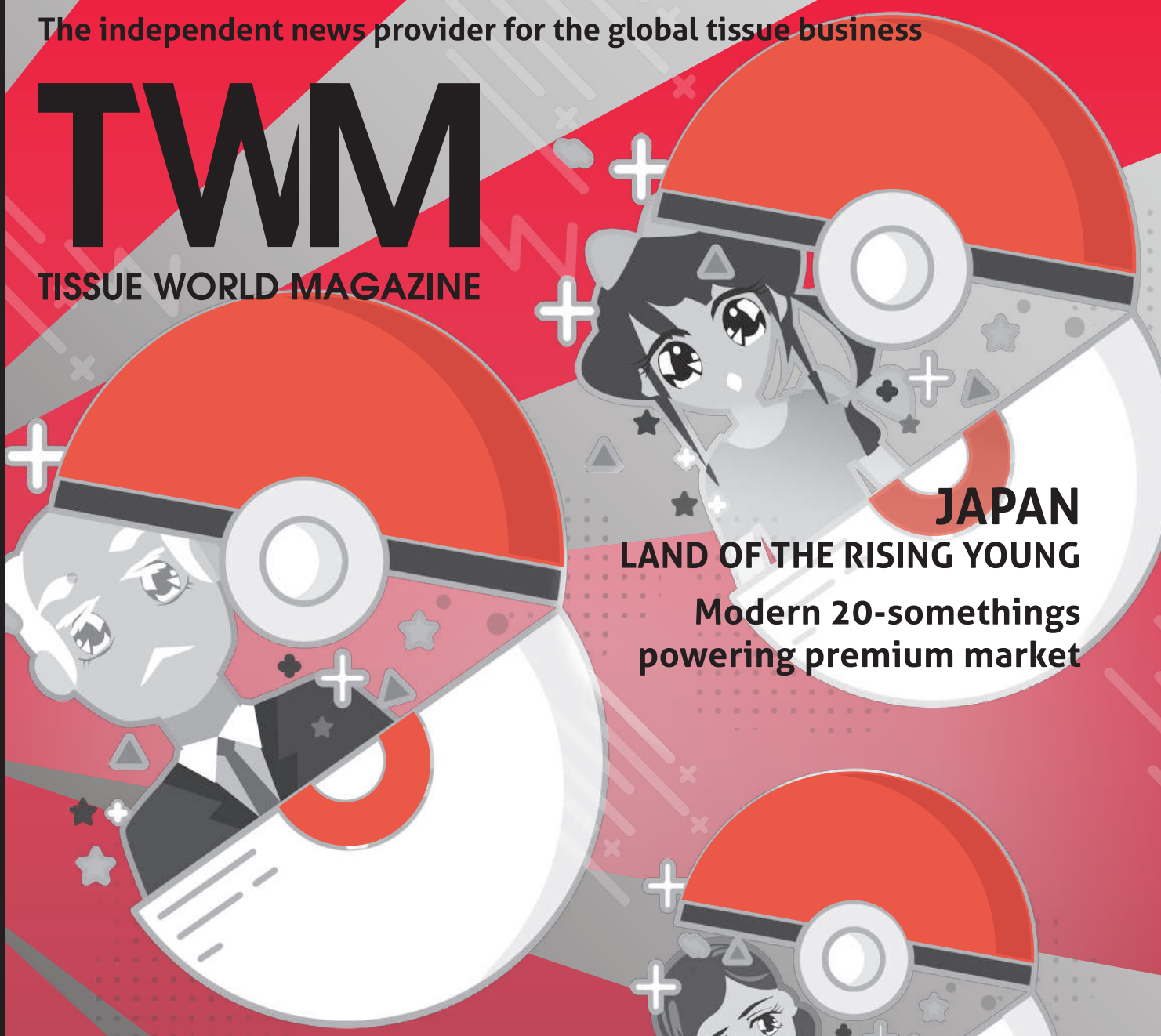
5
SEPTEMBER/OCTOBER 2017

The independent news provider for the global tissue business

TWM

TISSUE WORLD MAGAZINE



JAPAN

LAND OF THE RISING YOUNG

Modern 20-somethings powering premium market

PLUS:

MARKETISSUES
Brands v private label hots up in the US

EXITISSUES
APP's CEO International Manuel Dizon talks to TWM

SPECIAL FEATURE: Private label and brands
Delivery economy - centre store online?

TECHNICAL THEME: Chemicals
Latest developments in wet strength resins

CONSUMERSPEAK
Tissue and the art of romance

UBM

MCI (P) 051/12/2016

Let the power of our world work for you.

The Power of Leadership

Convermat is a leading global supplier of parent rolls of tissue worldwide. Our unsurpassed network of strategic alliances, resources and industry knowledge will help your business grow stronger and achieve higher profit results.

The Power of Reliability and Speed

Convermat can deliver a continuous stream of tissue as we consistently maintain capacity balance for many of the leading global tissue players.

The Power of World Reach

With our extensive network of global sources and customer reach, Convermat is uniquely positioned to offer the best price in any market condition and in any location around the globe.

The Power of Professional Service

Our expert staff can handle all aspects of your requirements including transportation, import/export protocols, documentation, technical specifications, testing lab, foreign currency management, credit risk, and all relevant sales services.

Let the power of our world work for you.

www.convermat.com

T **516 . 487 . 7100**
F **516 . 487 . 7170**

convermat
CORPORATION

New York | California | Florida | Wisconsin
Hong Kong | Mexico

FSC
www.fsc.org
FSC® C113240
The mark of responsible forestry

YOUR SINGLE SOURCE FOR TISSUE SINCE 1976

Toilet Tissue | Facial Tissue | Toweling | Napkins | Specialty Wadding | TAD | DRC | Air-Laid | Wipes

Clearwater Paper's president and CEO Linda K. Massman reports second quarter results in World News; How next-generation chemicals can enhance sustainable T&T development.

TWM

TISSUE WORLD MAGAZINE

In this issue

Quick links

www.tissueworldmagazine.com

Cover: *An illustration in the style of Japan's Manga comic books showing the country's changing demographics*
By PURPLEPRINT Creative.

YOUR EXPERT SERVICE

IN ONE WORD, ALL TOSCOTEC SERVICES.

YES is the Toscotec division created to accompany customers' demands daily, offering them remote and on-site assistance for all maintenance needs and for the good operation of their plants.

A team of specialized professionals to propose a range of services for the specific requirements of the system and to guarantee the best overall efficiency over time.

- YES - YANKEE DRYERS
- YES - PAPER MAKING
- YES - HANDLING
- YES - BURNERS
- YES - YANKEE HOOD & AIR

YOUR NEEDS, OUR SOLUTIONS.

www.toscotec.com

TOSCOTEC

The shifting growth of Asia's most developed country; premium and lower mainstream products key

Quality, in Asia's most developed country, is key in the Japanese tissue market ... that much is a constant.

Much else, however, has moved on in the four years since TWM's last Country Report from there, and all the signs suggest that change – paradoxically, as this is fundamentally a conservative country – is beginning to emerge as a force to influence the future.

Most of it has an undercurrent of youthful expectation, and powerful economic and demographic currents are in flux.

T&T is sharing the benefits of the latest raft of economic recovery policy. Since 2008, Japan's economy has been through four recessions with various fiscal policy initiatives never fully lifting the nation clear.

Now, there has been strong growth for the three years after stimulus measures were put in place. Growth is coming in the form of new entries in the market. In this issue, TWM talks extensively to Manuel Dizon and Akinori Owaki, CEO international and Japan's Universal Paper president respectively, of one of those companies – APP.

The most up-to-date national growth statistics are the best in two and a half years at 1%, and a sixth consecutive quarter has seen GDP growth. Consumer spending, traditionally the weakest point in the economy, has risen almost 1%, again ahead of forecasts.

The household paper market is becoming increasingly robust. Shipments to hotels and commercial facilities are increasing and there is a tourism boom underway. The Olympics in 2020 and 40 million visitors are expected that year. Plus, the uniquely Japanese fact, emergency planning in a land of tsunamis and earthquakes is also an essential practicality – stocking up for disasters which may or may not, but just might, arrive. But of the internal dynamics of the tissue market itself, our Country Report offers up startling developments. Japan's well-established and thriving middle class in declining in number and spending power.

The rich are getting richer and the poor poorer. Tissue is beginning to reflect that dramatic shift with more emphasis on premium or economy products, less so on the middle range. Companies are innovating to meet Yen-backed demand that comes especially from young Japanese women who are prepared to pay for top quality tissue... with lotions and stylish packaging.

Helen Morris

Senior editor, Tissue World magazine

Japan's unique story of tissue is detailed inside. Innovation is all very well, but TWM notes with some concern one innovation which we hope doesn't catch on. Technological advancement and the evolution of modern bathroom facilities has some toilet seats equipped with water cleansing devices and automated warm air dryers. Nice, but these bathrooms have no toilet paper and no paper towels.

The rich are getting richer and the poor poorer. Tissue is beginning to reflect that dramatic shift with more emphasis on premium or economy products.

EDITORIAL HEADQUARTERS

UBM Exhibition Singapore Pte Ltd.
10 Hoe Chiang Road, #20-05 Keppel Towers, Singapore 089315
Tel: +65 6592 0888 • Fax: +65 6221 2282

DEPUTY EVENT DIRECTOR & PUBLISHER
Agnes Gehot
agnes.gehot@ubm.com

SENIOR EDITOR
Helen Morris
helen.morris@ubm.com

ASSISTANT MARKETING MANAGER
Lei Ching Yew
leiching.yew@ubm.com

MANAGING DIRECTOR
Paul Wan
paul.wan@ubm.com

SENIOR VICE PRESIDENT
Chris Eve
christopher.eve@ubm.com

PRESIDENT/CEO
Jimé Essink
jime.essink@ubm.com

UBM

ADVERTISING ENQUIRIES

Americas and Europe
Paolo Rampetta
Tel: +32 497 050 755
Skype: paolo.rampetta
paolo.rampetta@skynet.be

Sales Asia-Pacific
Jay Kim
Tel: +65 65920888 ext 870
jayong.kim@ubm.com

TISSUE WORLD is published bi-monthly. The subscription price is US$400 per year for 6 issues. Subscription is free for qualified subscribers in the tissue industry.

Please send address corrections to **UBM Exhibition Singapore Pte Ltd.**
10 Hoe Chiang Road, #20-05 Keppel Towers, Singapore 089315
Tel: +65 6592 0888 Fax: +65 6221 2282
Email: info@tissueworld.com

Subscription online at www.tissueworldmagazine.com

In Tissue World all measures are metric and all dollars ($) are US dollars, unless otherwise stated.

All is not well for North American tissue producers

As brand loyalty is slowly eroding in the US, Europe's leading discounters are set for major expansions. Report for TWM by RBC Capital's markets analyst Paul Quinn.

Change is afoot. Branded tissue products will soon see a ramp up in competition from private label and even private label is expected to see some margin compression as European discounters shake things up in North America. It's usually the threat of overcapacity that is of our prime concern. However, the changing customer landscape is expected to be even more of a challenge.

So not only is there a lot more tissue coming to the market over the next two-three years, but finding a home for this new facial, bathroom tissue and towel is going to work for some and not others.

This short article will look at the changing tissue customer base and examine some initial thoughts on the new trends. We will also take a look at the numerous capacity additions and resulting decline in industry operating rates. Without some capacity closures, we expect that tissue pricing will come under pressure later this year and through 2018.

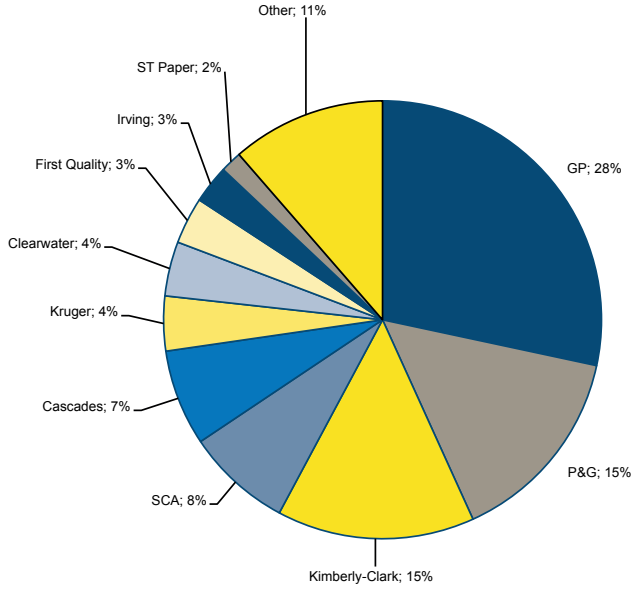
The Europeans are coming – good for private label? Maybe!

Discount grocery chain Aldi plans to invest $5 billion to open nearly 900 stores and remodel hundreds more in the U.S. The expansion, over the next five years, puts the German grocer on track to becoming the third-largest food retailer in the U.S. by store count, behind the larger Wal-Mart Stores Inc. and Kroger, and to become a growing threat to traditional food retailers.

Aldi has stated its goal to have a total of 2,500 locations across the U.S. by 2022. Its plan comes as another German discounter, Lidl, has just opened its first 10 stores in the U.S. this summer as part of a multiyear expansion with 100 stores expected by next summer.

So not only is there a lot more tissue coming to the market over the next two-three years, but finding a home for this new facial, bathroom tissue and towel is going to work for some and not others.

North America Tissue Paper Capacity, 2017



Paul Quinn

Market analyst, RBC Capital

A recent report by Bain & Co, suggested that deep discount chains in the U.S. would grow by up to 10%/year through 2020, five times the rate of traditional grocers. Officials at Aldi and Lidl, which is new in the U.S., said they are a step ahead of their competitors given their longstanding use of store brands to drive down price.

About 90% of the goods carried at Aldi stores and the coming Lidl ones will be private label. While European shoppers are much more accustomed to buying private-label products than Americans, loyalty to brands in the U.S. is slowly eroding and could lead more shoppers to try Aldi or Lidl, especially millennials.

So while both Aldi and Lidl are expected to boost private label tissue volumes, they tend to be aggressive on their negotiations with suppliers, seeking the lowest cost for their customers. Clearly, the big winners will be the consumers, as they will benefit from strong price competition between branded and private label options.

2017 North American stats point to a balanced market for now

Converted product shipments are up 1.8% in 2017 with total at-home

(consumer) shipments of converted tissue products increasing 1.4% in 2017. This relative weakness was attributable to zero growth in napkins and facial tissue, combined with minor gains in bathroom tissue. Total Away-from-Home (AfH) shipments of converted tissue products continue to demonstrate resilience, growing 2.7% YTD (to June). Operating rates in June were higher than the 10-year average (96.9%) at 97.8%. High-quality virgin parent rolls prices strengthened in June to $1,404/ton, up 3.6% y/y, while high quality recycled parent roll prices increased 2.1% higher y/y.

Capacity additions are expected to overwhelm demand growth

There are now eight tissue PMs planned to come on line in 2018 & 2019 (five TAD and three NTT) in 2018/19. Georgia-Pacific is scheduled to start a $400m new TAD tissue PM in Palatka, FL in 2019. Irving Consumer Products is expecting delivery of a TAD tissue-making machine from Valmet in 2018 (capacity is estimated to be 70,000ST/year). Irving Tissue has also announced a $400m 75,000mt TAD machine for 2019.

First Quality Tissue also has two new TAD machines coming online as a part of its expansion initiatives. One machine will be constructed in Anderson, South Carolina and is expected to begin production in the second half of 2018 while the other will be in Lock Haven, Pennsylvania and is projected to start in the first half of 2019.

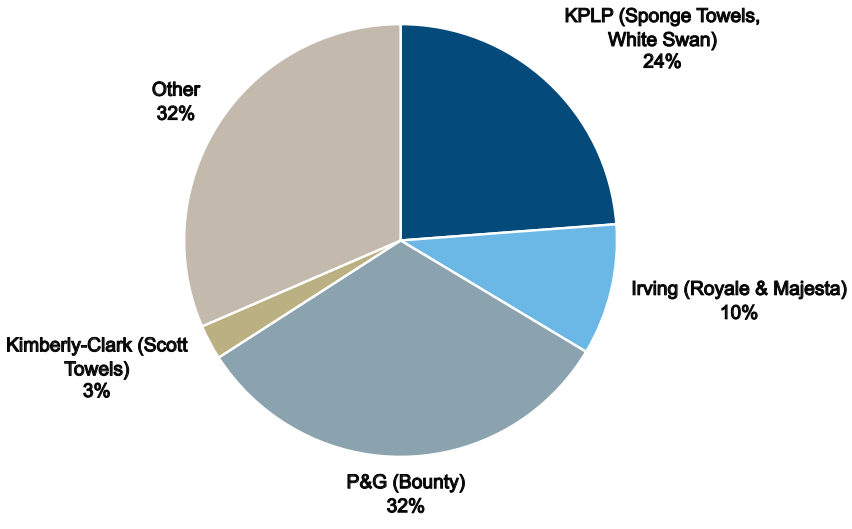
These two machines will add ~145K tonnes of production capacity. Additionally, Clearwater plans to build a new Valmet NTT tissue machine at the company's existing facility in Shelby, NC, with an expected annual capacity of 70K tonnes spread across high-quality private-label premium and ultra-premium tissue products (expected to come online in the first quarter of 2019).

In terms of start-ups, Resolute Forest Products announced the start-up of its new tissue machine in Calhoun, Tennessee, which will continue to ramp-up production before reaching maximum capacity mid-2018. Lastly, Irving Consumer Products just announced a $400MM 75K tonne TAD machine in Macon, Georgia for a 2019 start-up.

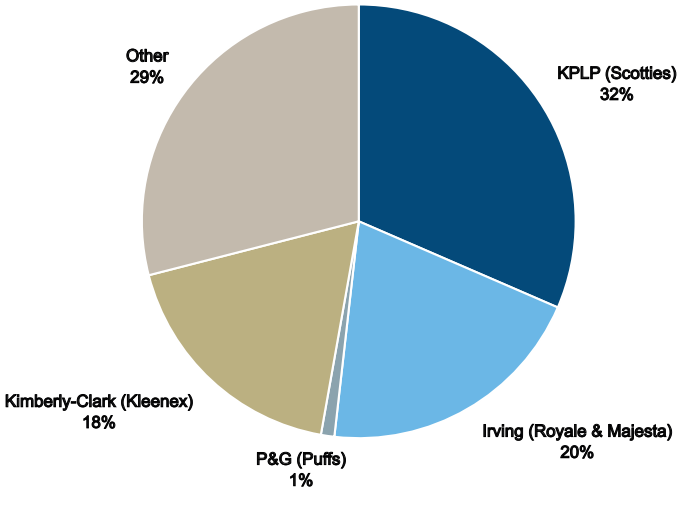
Operating rates to fall by 4.1% in 2019

We believe that, barring significant tissue machine shuts, we expect operating rates to fall over the next two years and pricing pressure on all tissue products to surface.

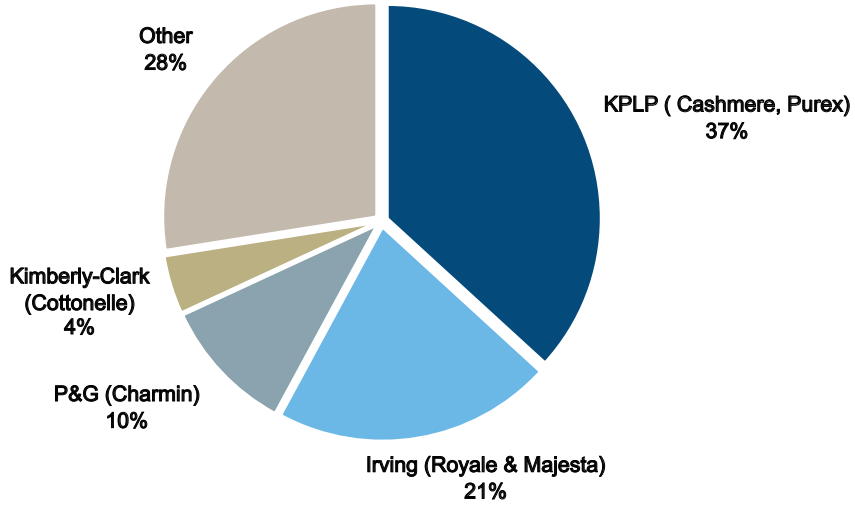
Paper Towel



Facial Tissue



Bathroom Tissue



Energy efficiencies: *The Navigator Company's new TM will raise its tissue production capacity to 130,000tpy while reducing the need for thermal energy*

PORTUGAL

The Navigator Company continues expansion into tissue with XcelLine investment

The Navigator Company is to boost its tissue capacity by 70,000tpy after investing in an XcelLine TM.
Supplied by Voith, the line is designed to produce high-quality tissue paper and maximise the usage of slush Eucalyptus pulp.
The tissue facility will be integrated into the company's existing Cacia site, where it operates one of the biggest pulp production plants in Europe.
The scope of supply includes the latest Voith technologies to minimise energy consumption and achieve maximum efficiency in short fibre usage.
With the NipcoFlex T shoe press technology, the TM supplier said the need for thermal energy can "be substantially reduced".
The tissue machine is designed for an operating speed of 2,000m/min and will annually produce 70,000 metric tonnes of high-quality toilet and towel paper from pulp with a working width of 5,6m.
Start-up is scheduled for second half of 2018.
With this new investment, the total tissue production capacity of The Navigator Company will raise to 130,000tpy.

The Navigator Company has a total paper capacity of 1.6m tpy, largely integrated with pulp production, and more than 3,000 staff.
The Navigator Company is the new face of the former Portucel Soporcel group, after it rebranded in 2016.
It is a leading global manufacturer of uncoated woodfree (UWF) printing and writing paper, as well as a top producer of BEKP (Bleached Eucalyptus Globulus Kraft Pulp).
The company entered the tissue market in 2015 when it acquired A.M.S. Star Paper, based in the Iberian Peninsula.
It now aims to become one of key tissue players in the region.

SPAIN

Sofidel targets Spanish market with Ibertissue investment

Sofidel has invested in an Advantage NTT tissue production line to be installed at its Ibertissue mill in Buñuel, Spain.
Delivery includes an Advantage NTT 200 tissue production line, stock preparation equipment and automation system.
Start-up of the new Valmet-supplied line is scheduled for the third quarter of 2018.
The new tissue machine will have a design speed of 1,800m/min in textured mode and 2,000m/min in plain mode.

Ibertissue investment: *Sofidel Group targets Spanish market with TM scheduled for start-up in 3Q of 2018*

Scope of supply comprises a complete tissue production line including an Advantage NTT tissue machine, with an OptiFlo headbox and a cast alloy Yankee cylinder.
The Sofidel Group is one of the leading manufacturer of paper for hygienic and domestic use worldwide.
Established in 1966, the group has subsidiaries in 13 countries – Italy, Spain, the UK, France, Belgium, Germany, Sweden, Poland, Hungary, Greece, Romania, Turkey and the USA.

ICT Iberica boosts capacity by 70,000tpy with TM investment

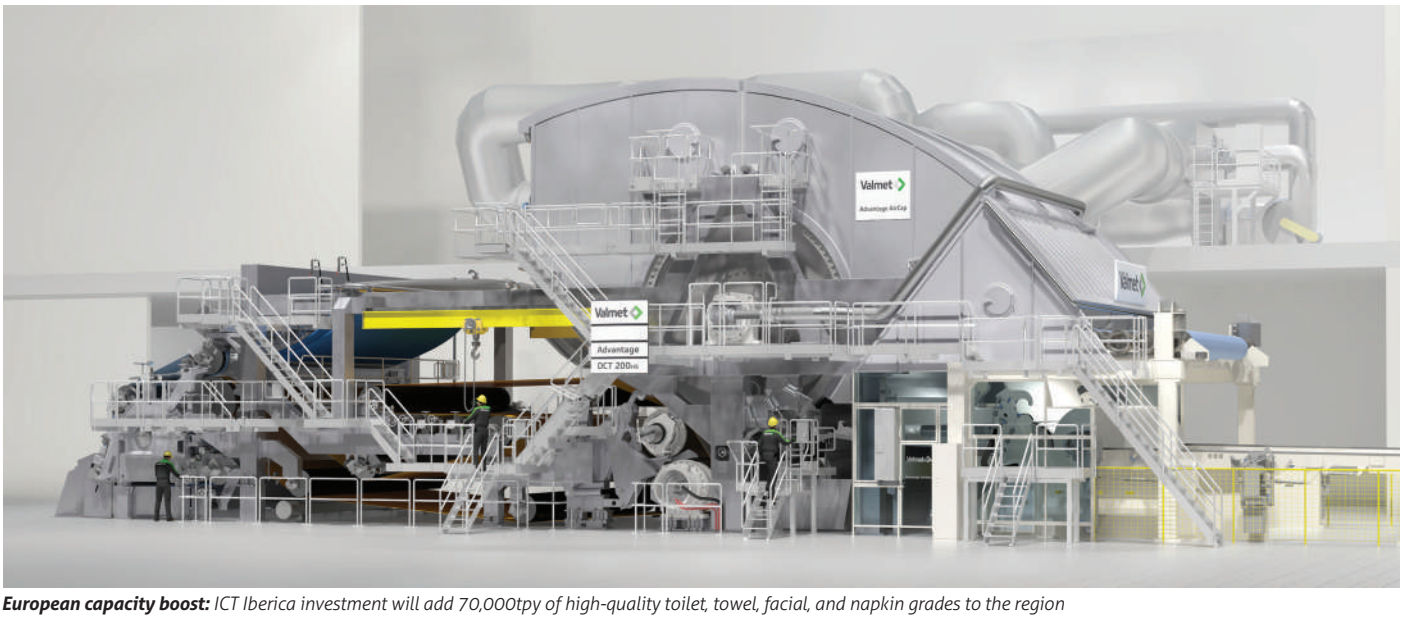
ICT Iberica has invested in an Advantage DCT 200HS tissue line which will be installed at its mill in Burgo.
The new line will add 70,000tpy of high-quality toilet, towel, facial, and napkin grades to the European market and start-up is planned for the third quarter of 2018.
Riccardo Baccelli, ICT executive director, said that following the investment, the site's production will target the ultra-quality tissue market sector in Spain.
Supplied by Valmet, the scope of delivery includes a complete tissue production line with stock preparation system and an Advantage DCT 200HS tissue machine with the latest technology for highest quality consumer tissue.
The ICT Group has been in the tissue business since 1978 and is a European market leader that specialises in premium products.
It operates ten paper machines in four European countries: five in Italy, three in Poland, one in France and one in Spain.

"As our results continue to improve, we remain focused on our short-term priorities of increasing sales in our tissue segment, battling unfair US countervailing and anti-dumping duties, and managing our indebtedness and liquidity to be in a position to continue our long-term transformation."

Richard Garneau, Resolute Forest Products president and chief executive

Resolute reports net loss in preliminary 2Q 2017 results

Resolute Forest Products has reported a net loss of $74m for the quarter ended 30 June 2017, compared with a net loss of $42m in the same period in 2016.
Sales were $858m in the quarter, down 4% from the second quarter of 2016.
In tissue, the company said its improvement in its profitability continued but "remained short of expectations".
Its tissue segment included only the Atlas Tissue operations in the second quarter and reported "a marginal improvement" in its operating loss compared to the first quarter.
The overall transaction price rose by $4 per short tonne as gains in converted products were partially offset by declining pricing for parent rolls.
It added that the average transaction price for tissue fell by 11%.
Delivered costs also rose when compared to the year-ago period because of rising energy and fibre expenses, as well as less favourable distribution costs.
Resolute has invested $47m in fixed assets during the quarter, $33m of which was spent on the Calhoun tissue project.
Richard Garneau, president and chief executive, said: "This quarter's performance was a clear improvement from the first quarter.
"In pulp, we are cautiously optimistic that market conditions will remain relatively favourable at least through the third quarter.
"In tissue, I am confident that our progress will accelerate in the short-term with the addition of Patrice Minguez as president of the company's tissue group."
The company expects to include the results of its Calhoun tissue operations in its fourth quarter 2017 results.



European capacity boost: *ICT Iberica investment will add 70,000tpy of high-quality toilet, towel, facial, and napkin grades to the region*

AMERICAS

Above: *Linda K. Massman, Clearwater Paper president and chief executive*

Clearwater Paper reports decline in earnings; cites lower consumer product shipment volumes

Clearwater Paper has reported net earnings of $8.04m in its second quarter compared with $20.9m for the same time last year.

Net earnings for the six months ended 30 June 2017 were $15.5m compared with $39.3m the same time a year earlier.

EBITDA was $45.7m for the second quarter of 2017 compared to $62.2m a year earlier.

Linda K. Massman, president and chief executive, said: "We achieved solid second quarter results that were in line with our quarterly outlook.

"The positive impacts to the quarter included higher prices and a stronger sales mix for paperboard, which were offset by higher external pulp pricing and lower consumer product shipment volumes, as parent rolls were used to build needed inventory."

Net sales in the consumer products segment were $231.9m for the second quarter of 2017, down 6.5% from $247.9m.

This decrease was due to lower parent roll sales resulting from the shutdown of two higher cost paper machines at the Neenah, Wisconsin mill at the end of 2016 and a 1.7% decrease in retail tonnes sold.

Total tissue sales volumes of 91,450 tonnes in the second quarter of 2017 decreased by 7.7% and converted product cases shipped were 12.7m, down 3.9%, each compared to the second quarter of 2016.

Average tissue net selling prices increased 1.6% to $2,533 per tonne in the second quarter of 2017, compared to the second quarter of 2016.

Clearwater Paper has reported net earnings of $8.04m in its second quarter compared with $20.9m for the same time last year. Net earnings for the six months ended 30 June 2017 were $15.5m compared with $39.3m the same time a year earlier. EBITDA was $45.7m for the second quarter of 2017 compared to $62.2m a year earlier.

Cascades boosts AfH presence with US$64m Oregon facility inauguration

Cascades has inaugurated its towel and tissue converting plant on the West Coast of America.

Based in Scappoose, the company said the 284,000-square-foot tissue converting facility is equipped with best-in-class converting lines, high-speed rewinders and folders, and with one of the fastest bath lines in the world.

It manufactures towel and tissue products under the Cascades PRO brand which is targeting the United States and Canadian AfH markets and products include hand towels, bathroom tissue, napkins, kitchen roll towels, facial tissue, wipers and dispensers.

Cascades president and chief executive Mario Plourde said: "This new facility extends the breadth of our national coverage, and will enable us to better serve our customers in the southern and western United States.

"The Scappoose facility will also allow us to increase our converting capacity and integration rate as we will be using tissue paper produced at our St-Helens plant located just eight miles away.

"It will have a production capacity of nearly six million cases per year of virgin and recycled bathroom tissue products and paper hand towels. It also offers possibilities for future expansion."

Jean Jobin, Cascades Tissue Group president and chief operating officer, said the completion of the project marks an important milestone for the company.

"It has long been our goal to expand our presence within the United States and offer greater quality and flexibility for our customers.

"This world-class facility is the first step in our plan to modernise our tissue manufacturing and converting equipment and a clear indication of our commitment to this segment."

Cutting edge: *L-r – Cascades Tissue Group president and COO Jean Jobin, Cascades co-founder Laurent Lemaire, Oregon state senator Betsy Johnson, Cascades co-founder and executive chairman Alain Lemaire, Cascades COO Mario Plourde, Columbia county commissioner Henry Heimuller, governor of Oregon Kate Brown, former Columbia county commissioner Tony Hyde, mayor of Scappoose Scott Burge and state house representative Brad Witt*

TISSUE WORLD
Miami

March 21 - 23, 2018
Miami Beach Convention Center
Miami, FL, USA
www.tissueworld.com/miami

Be part of the largest tissue industry gathering in North America

"Exhibitions play a vital role in our business and we have found that Tissue World provides us the greatest success thanks to its concentration in the tissue industry. The professional staff provides attendees the opportunity to participate in valuable educational seminars with key speakers to gain a further understanding about industry trends. We always look forward to the next show as it keeps getting better and better."

Edson Packaging Machinery Ltd.

Reserve Your Booth Now or Register Your Interest to Attend at
www.tissueworld.com/miami

Portfolio
TISSUE WORLD

Organised by
UBM

Official Magazine
TWM
TISSUE WORLD MAGAZINE

www.tissueworld.com

INDONESIA

PT Aspex Kumbong boosts capacity with TM investment

PT Aspex Kumbong has signed for a complete tissue machine to be installed at its Jakarta, West Java-based site. The line will be supplied by Papcel Group and will include an approach flow system, Crescent former, winder and auxiliary equipment.

PT Aspex Kumbong has signed for a complete tissue machine to be installed at its Jakarta, West Java-based site.

The line will be supplied by Papcel Group and will include an approach flow system, Crescent former, winder and auxiliary equipment.

The tissue machine is designed to produce 60tpd of tissue paper grades, facial and toilet tissue paper, 13 to 35gsm basis weight ranges and has a maximum operating speed of 1,200mpm. The sheet width on reel trim will be 2,850mm. ABK Groupe will also supply detailed engineering for all the supplied equipment.

The commissioning of the new tissue line is scheduled for the end of 2018.

UK

Increasing capacity: *Accrol's €4.5m site and machinery investment is in response to demand from the UK's major multiples and discount sector.*

Accrol Group invests in manufacturing line for Leyland site; start-up end of 2018

Independent tissue converter Accrol Group Holdings has invested €4.5m in a tissue converting machine to be installed at its recently opened facility in Leyland, Lancashire.

The machine features the latest technology and will convert a variety of tissue grades, with a capacity of 15,000tpy.

Installation and commissioning will be towards the end of 2018.

Accrol opened its 168,000sq ft manufacturing facility in Leyland in April 2017; it has two converting lines installed and operational, with space for a further four converting lines.

Chief executive Steve Crossley said: "The new converting line will add further production capacity at our Leyland facility and will convert a wide range of product types, particularly at the premium end of the market.

"This investment is in line with our growth plans for the business and will ensure that we have the capacity to service, and benefit from, increasing demand from both major multiples and the discount sector."

Accrol manufactures toilet rolls, kitchen rolls and facial tissues as well as other tissue products.

The company has committed capital expenditure of c.£18.2 million in the last three years.

It currently has 17 converting lines in operation providing capacity of approximately 143,000 tonnes per annum.

Independent tissue converter Accrol Group Holdings has invested €4.5m in a tissue converting machine to be installed at its recently opened facility in Leyland, Lancashire. The machine features the latest technology and will convert a variety of tissue grades, with a capacity of 15,000tpy. Installation and commissioning will be towards the end of 2018.

Dream team: *Vinda Paper (Zhejiang) increases premium quality tissue production by 60,000tpy.*

CHINA

Vinda Paper (Zhejiang) boosts capacity with TM start-ups

Vinda Paper (Zhejiang) has fired up two Toscotec-supplied tissue machines at its Longyou mill in Zhejiang province.
The mill has now increased its production capacity by 60,000tpy.
The new AHEAD-2.0M tissue lines are designed for the production of premium quality tissue products, including toilet paper and facial tissue.
Vinda Zhejiang's new mill currently has four Toscotec's tissue machines, two AHEAD- 1.5M fired up in 2014 and the new AHEAD-2.0M.

Lee & Man targets Chinese east coast with Voith-supplied TM start-up

Lee & Man has started-up its XcelLine TM 10 tissue machine at its Jiangxi-based tissue site.

Supplied by Voith, TM10 has a wire width of 5,600mm and is designed for a maximum operational speed of 2,000m/min.
It will produce 60,000tpy of household tissue from virgin fibre. The scope of supply includes the BlueLine stock preparation, approach flow system, broke handling, a white water system and the tissue machine.
The supplier said the 5.5-metre Steel Yankee dryer cylinder will enhance drying efficiency through optimised heat transfer, while a high-performance steam-heated hood will provide the required tissue quality with lower energy consumption.
Products from the Jiangxi site are sold into the East coast market in China.
Established in 1994, Lee & Man Paper Manufacturing is a leading paper manufacturers, mainly producing packaging paper and tissue paper with different grades and specifications. The company's annual production volume in 2016 was up to 5.63 million tonnes.
It has five production locations in China, with a total of 6,500 staff.

Established in 1994, Lee & Man Paper Manufacturing is a leading paper manufacturers, mainly producing packaging paper and tissue paper with different grades and specifications. The company's annual production volume in 2016 was up to 5.63 million tonnes. It has five production locations in China, with a total of 6,500 staff.

MEXICO

Convertipap boosts capacity with TM investment

Convertipap has invested in a tissue machine to boost its production capabilities.
Supplied by Recard, the turnkey plant has a sheet width of 2.8m and a production capacity of 90tpd.
It has a speed of 1500m/min and was successfully started up on 2 June.
The machine began producing 24/7 immediately and after a week attained maximum guaranteed speed.

ASIA

Suzano to reduce BEK sales to Asia by 100,000 tonnes in 3Q17, says CCO

Suzano estimates a 100,000 tonnes reduction in its bleached eucalyptus kraft (BEK) pulp sales volumes during the third quarter of this year, due to longer maintenance downtime to be taken at the company's Imperatriz mill, Maranhão state.
Suzano's CCO Carlos Aníbal said: "We will be cutting down our pulp shipments to Asia by 100,000 tonnes during the third quarter."
According to Aníbal, the Imperatriz 1.5 million tpy BEK pulp mill will stop between the second half of August and the first week of September.
"Besides promoting regular maintenance activities at that mill, we will be working on the 5.1 Project, which involves debottlenecking the Imperatriz unit's capacity," he added.
Suzano plans to add 150,000tpy of pulp capacity to the Imperatriz mill, raising it to 1.65 million tpy of BEK.
Aníbal said that Suzano's pulp availability for purchase will be lower fefore the Imperatriz stoppage.
"We need to build inventory so we can guarantee our clients' volumes while the mill is idle and right after it resumes operations," he said.
The company's 5.1 Project aims to increase its total annual pulp and paper capacity from 4.9 million tonnes to 5.1 million tonnes.
According to Suzano, as part of the 5.1 Project its Mucuri 1.75 million tpy BEK pulp mill in Bahia will also have its capacity increased later in 2018.

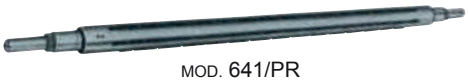
News from www.risiinfo.com

SVECOM P.E.

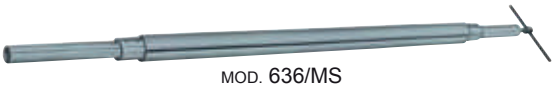
EXPANDING DEVICES

Expanding shafts


MOD 635/MK


MOD. 641/PR


MOD. 640/PQL


MOD. 636/MS


MOD. 640/PL


MOD. 650/PLF


MOD. 638/PK


MOD. 642/PM


MOD. 650/PLS

Chucks, safety chucks for rewinding/unwinding materials


MOD. 714/MZ


MOD. 740/PL


MOD. 715/PG


MOD. 713/MA


MOD. 718/PH


MOD. 711/MA


CUSTOMIZED MODELS


MOD. 925/KL

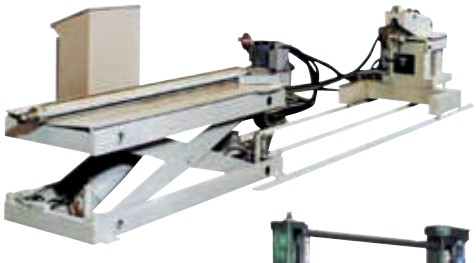

MOD. 714/AD

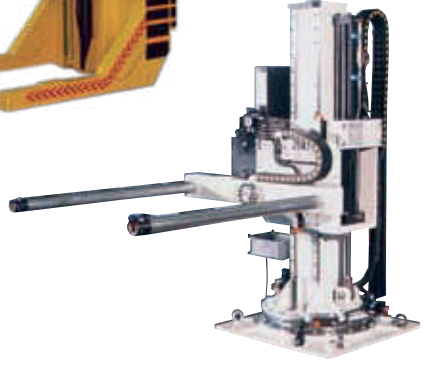

MOD. 900/KL


MOD. 935/PN

COD006EN

Handling Systems for Shaft and Reel





Visit our new website: www.svecom.com

Agents and distributors all over the world.
SVECOM P.E. Srl - Via della Tecnica, 4 - 36075 - Montecchio Maggiore - VICENZA - ITALY
Tel. (+39) 0444.746211 - Fax 0444.498098 - e-mail: svecom@svecom.com
For U.S.A market requests contact the affiliated Company Goldenrod Corp. - www.goldrod.com

GLOBAL

K-C references "challenging environment" in 2Q 2017 results

Kimberly-Clark has reported net sales of $4.6bn for the three months ended 30 June, down 1% compared to the same time a year earlier.

Operating profit for the period was $799m, down from $838 million in 2016.

Changes in foreign currency exchange rates had no overall effect on sales and the company added that its full-year 2017 net sales and organic sales are expected to be similar, or up slightly, year-on-year.

Chairman and chief executive Thomas J. Falk said: "Our second quarter results reflect a challenging environment.

"Nonetheless, we continue to manage our company with financial discipline, as we achieved $120m of cost savings, improved working capital and returned more than $600m to shareholders through dividends and share repurchases.

"We are focused on competing effectively in the near-term while we continue to execute our Global Business Plan strategies for long-term success."

In its consumer tissue segment, it reported second quarter sales of $1.5bn, a decrease of 2%. Volumes and net selling prices each fell 1%. Second quarter operating profit of $241m decreased 12%. The comparison was impacted by lower sales, input cost inflation and other manufacturing cost increases, partially offset by cost savings and lower marketing, research and general spending.

Sales for the sector in North America decreased 4%; volumes were down approximately 4% compared to 6% growth in the year-ago period, while net selling prices rose slightly.

The volume decline included impacts from lower promotion shipments and competitive activity.

Sales in developing and emerging markets increased 6% including a 4 point benefit from favourable currency rates.

Volumes increased 8% while net selling prices fell 5%. The changes mostly occurred in Latin America.

Sales in developed markets outside North America decreased 5% including a 4 point impact from unfavourable currency rates. Volumes fell 2% as declines in Western/Central Europe were mostly offset by increases in South Korea.

Fibria announces July $20/ tonne price hike on BEK in Europe and North America; Asia unchanged

Brazilian bleached eucalyptus kraft (BEK) pulp producer Fibria has announced a $20/tonne price increase for North American and European markets effective 1 July.

With the increase, Fibria's BEK prices in North America will climb to $1,060/tonne.

In Europe, the new prices will be $880/tonne.

Fibria stated that its BEK prices in Asia will remain unchanged in July, at $690/tonne.

News from www.risiinfo.com

Fabio Perini expands Industry 4.0 presence; announces laboratories in US, Brazil and China

Fabio Perini is to boost its Industry 4.0 data-driven offering with the opening of three additional "PIVOT" laboratories.

PIVOT is the supplier's global database that uses data to support tissue customers in growing their business.

Its first laboratory opened in Lucca, Italy, in 2016; a facility in Green Bay, US, opened in July 2017, and subsequent facilities will open in Joinville in Brazil towards the end of 2017 and a fourth site in Shanghai, China, in 2018.

The in-house laboratories will offer support for tissue customers, from

"Nonetheless, we continue to manage our company with financial discipline, as we achieved $120m of cost savings, improved working capital and returned more than $600m to shareholders through dividends and share repurchases. We are focused on competing effectively in the near-term while we continue to execute our Global Business Plan strategies for long-term success."

Thomas J. Falk

"This acquisition represents our commitment to direct channel investments in strategic growth markets. The addition of Nopco Colombiana allows Solenis to expand its capabilities to serve the growing process and water treatment markets in Central and South America."

John Panichella

Solenis completes acquisition of Nopco Colombiana

Solenis has boosted its product offering after completing the acquisition of Nopco Colombiana.

Headquartered in Medellin, Colombia, Nopco Colom§biana produces and supplies specialised chemical solutions for water intensive industries in Central and South America.

The business will be integrated into Solenis as part of its direct-to-market strategy in emerging markets.

President and chief executive John Panichella said: "This acquisition represents our commitment to direct channel investments in strategic growth markets.

"The addition of Nopco Colombiana allows Solenis to expand its capabilities to serve the growing process and water treatment markets in Central and South America."

Solenis is a global producer of specialty chemicals for water intensive industries, including the pulp, paper, oil and gas, chemical processing, mining, biorefining, power and municipal markets.

tissue jumbo rolls to finished product.

Dario Giannini, Fabio Perini business development manager, said: "This provides a high-level of information helping to optimise manufacturing for maximum profitability.

"The result is actionable information at every stage of the tissue converting process."

Andritz responds to increased global tissue demand with pilot centre investment

Andritz has announced the start-up of its new PrimeLineTIAC tissue innovation and applications centre in Austria.

It was officially opened on 1 September and the supplier said it is the only plant in the world to offer eight different machine configurations for the production of conventional, structured, and premium tissue.

Thomas Scherb, director of sales, tissue pilot plant, said: "The PrimeLineTIAC started with a vision. Not only to be the world's most modern pilot plant, but also to become a sophisticated space for the tissue community to collaborate and implement the tissue solutions of tomorrow."

The company has built-in process flexibility from stock preparation to tissue on the reel.

It has also designed what it said is the world's "most flexible pilot machine with its eight possible configurations, five of which are totally new to the tissue industry".

Scherb said the pilot plant's flexibility means customer trials can be configured in any direction the customer needs: exploring new technologies, improving product quality, lowering manufacturing costs, saving energy, or training operators in a focused setting.

Dry-creped tissue can be produced on a vertical CrescentFormer with either a suction roll or shoe press, while textured tissue can be produced by a new, patented press arrangement.

The centre also houses two labs to analyse the chemical and physical processes in use.

Andritz collaborated on the pilot plant with several partners including Albany International Corp, Danfoss Drives, Fibria, IBS Paper Performance Group, Nash, Södra and Solenis.

TISSUE WORLD Milan

25 - 27 March 2019
Fieramilanocity
Milan, Italy
www.tissueworld.com/milan

The World's Largest Event Dedicated to the Tissue Industry

The original Tissue World, which begain in Nice in 1993, is THE BIG ONE: The world's largest show specifically for the tissue business. It gives tissue makers, converters and suppliers to the tissue making and converting industries a unique experience and opportunity to network, exchange ideas and learn.

Save your dates for the 2019 event now!

Portfolio
TISSUE WORLD

Organised by
UBM

Official Magazine
TWM
TISSUE WORLD MAGAZINE

www.tissueworld.com

BANGLADESH

Meghna Group of Industries moves into tissue

Meghna Group of Industries has diversified its product offering after it invested in its first tissue machine.
Supplied by Recard, PM1 is an Easy Crescent line with a sheet width of 2.8m and a production capacity of 50tpd.
It has a speed of 1,200m/min and produced its first reel of high quality paper immediately upon startup.

SWEDEN

Former SCA managers avoid prosecution for bribery

Sweden's anti-corruption watchdog has terminated the pre-trial investigation into possible bribery against SCA ex-managers including the former chief executive Jan Johansson and former chairman of the board Sverker Martin-Löf.
The preliminary investigation has been concluded in its entirety, chamber prosecutor at the National Anti-Corruption Unit of the Swedish Prosecution Authority Thomas Forsberg said in a statement.
According to Forsberg, the investigation was dropped because the actions, which date back to 2010-2011, had passed the statute of limitations.
The preliminary investigation was launched on 19 January 2015 on suspicion of possible bribery by representatives of SCA.
This followed continued media coverage in Sweden relating to SCA's top management and their family, friends and business associates' use of private planes, including for hunting trips in Sweden.
Johansson and Martin-Löf had to leave the company shortly after.

News from www.risiinfo.com

Sweden's anti-corruption watchdog has terminated the pre-trial investigation into possible bribery against SCA ex-managers including the former chief executive Jan Johansson and former chairman of the board Sverker Martin-Löf. The preliminary investigation has been concluded in its entirety, chamber prosecutor at the National Anti-Corruption Unit of the Swedish Prosecution Authority Thomas Forsberg said in a statement.

Vajda Papír has invested in a complete tissue production line to be installed at its mill in Dunaföldvár. The order comprises a PrimeLineCOMPACT VI tissue machine with Steel Yankee and shoe press as well as a complete stock preparation system, including pumps, automation, electrification, all auxiliaries, and services.

HUNGARY

Vajda Papír responds to customer demand with capacity boost

Vajda Papír has invested in a complete tissue production line to be installed at its mill in Dunaföldvár.
The order comprises a PrimeLineCOMPACT VI tissue machine with Steel Yankee and shoe press as well as a complete stock preparation system, including pumps, automation, electrification, all auxiliaries, and services.
Start-up of the Andritz-supplied line is scheduled for March 2018.
It has a design speed of 2,200m/min and a width of 2.74m and is equipped with a PrimePress XT Evo, the latest Andritz shoe press technology.
Vajda Papír is one of Europe's most dynamically expanding tissue producers.
The 100% Hungarian-owned private company operates tissue production mills in Hungary and Norway and covers the complete tissue product range.

RUSSIA

Hayat Kimya boosts high-quality tissue production capacity with Tartaristan investment

Turkey's Hayat Kimya has boosted its capacity in Russia after investing in an Advantage DCT machine, to be supplied at its mill in Yelabuga.
TM7 will have a width of 5.6m and a design speed of 2,200m/min.
The investment was made in response to customer demand for high-quality tissue products. Supplied by Valmet, it will add 70,000tpy of tissue to the company's existing production of facial, toilet and towel tissue.
Previously Valmet has delivered five Advantage DCT 200TS tissue production lines to Hayat, which started up at the company's mills in Turkey in 2010 and 2015, Iran in 2013, Russia in 2014 and Egypt in 2016.
The supplier has also conducted an extensive rebuild of Hayat's TM1 machine in Turkey during 2015.
The scope of delivery will include a complete tissue production line featuring stock preparation systems and a Valmet Advantage DCT 200 TS tissue machine.
It will be equipped with an OptiFlo headbox and a cast alloy Yankee cylinder.
Hayat Kimya is part of the Hayat Group which primarily operates in the home care, hygiene and tissue categories consumer goods industry.
Hayat has continued to invest significantly since its entrance into the tissue category 11 years ago.

Turkey's Hayat Kimya has boosted its capacity in Russia after investing in an Advantage DCT machine, to be supplied at its mill in Yelabuga. TM7 will have a width of 5.6m and a design speed of 2,200m/min. The investment was made in response to customer demand for high-quality tissue products. Supplied by Valmet, it will add 70,000tpy of tissue to the company's existing production of facial, toilet and towel tissue.

Japan – emerging from stagnant growth period

Bill Burns

Senior consultant, Fisher International

Japan, the most developed country in Asia, is the quintessential definition of an economic miracle emerging from the defeat and economic devastation of World War II to become the world's second largest economy after the US until China claimed that position in recent years.

Supported by the government and favoured by a culture of strong work ethics, Japan's industry and businesses became masters of high technology with a steadily gained reputation for high quality and low production costs. But by the end of the 20th and into the 21st century economic growth had slowed significantly following the nation's "asset price bubble" crisis. Since 2008, Japan's economy has been through four recessions with various fiscal policy initiatives whose effectiveness leaves questions for the future.

Geographically, Japan is part of the Asia Pacific Region where the Towel and Tissue (T&T) industry is dominated by China with 68% of the region's capacity. Japan is the second largest producing country in the region with a 12% share (Figure 1). This huge share imbalance was not always the case. The region overall is going through very rapid

Supported by the government and favoured by a culture of strong work ethics, Japan's industry and businesses became masters of high technology with a steadily gained reputation for high quality and low production costs. But by the end of the 20th and into the 21st century economic growth had slowed significantly.

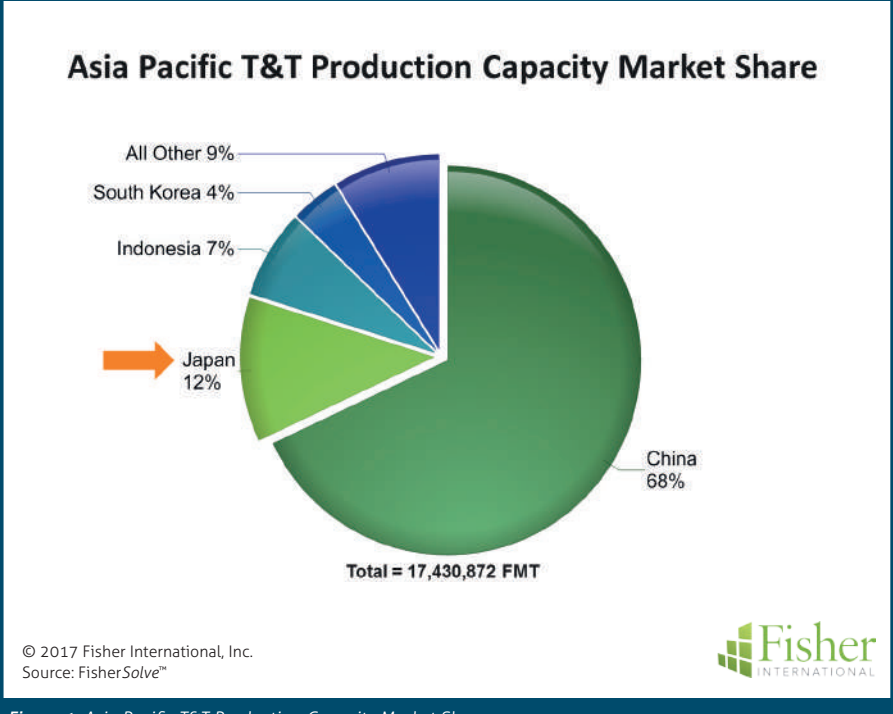


Figure 1: Asia Pacific T&T Production Capacity Market Share

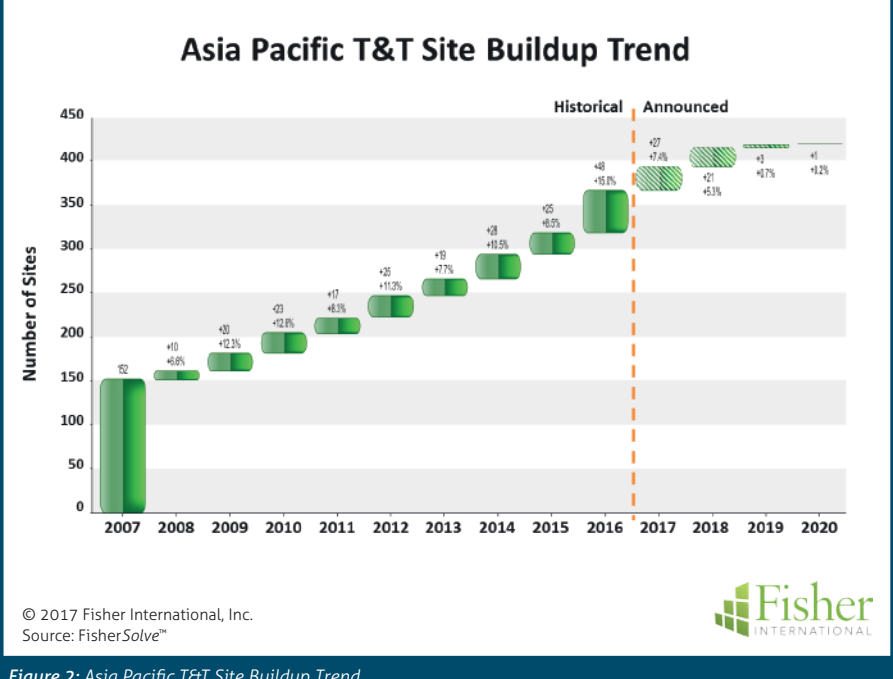


Figure 2: Asia Pacific T&T Site Buildup Trend

By Fisher International's **Bill Burns**

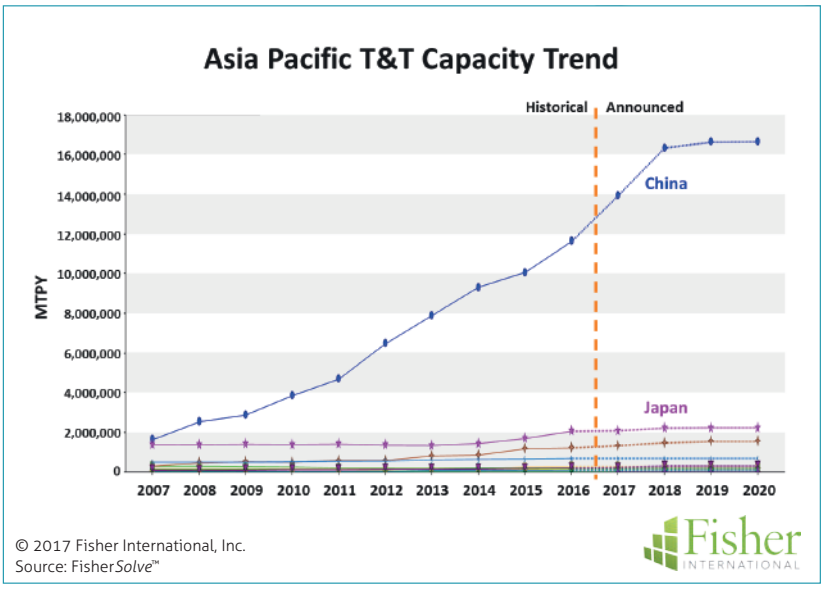


Figure 3: Asia Pacific T&T Capacity Trend

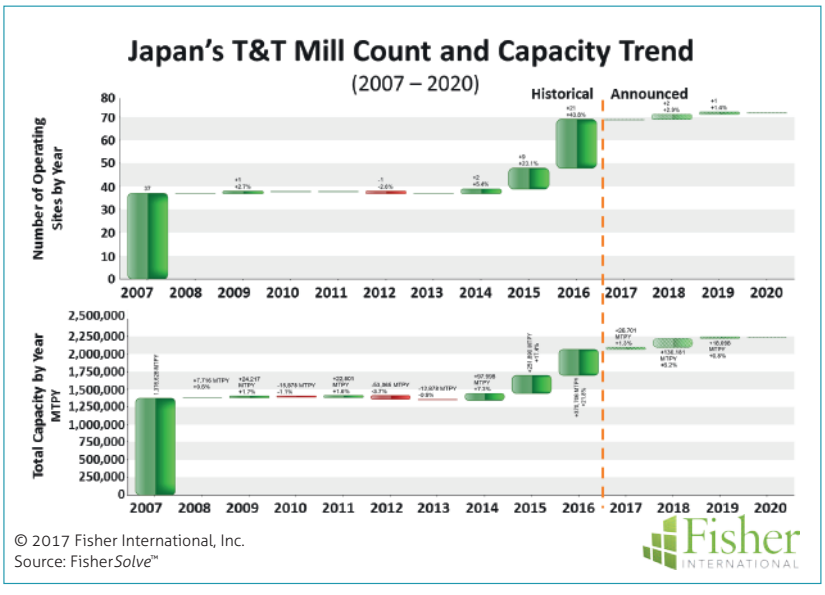


Figure 4: Japan's T&T Mill Count and Capacity Trend

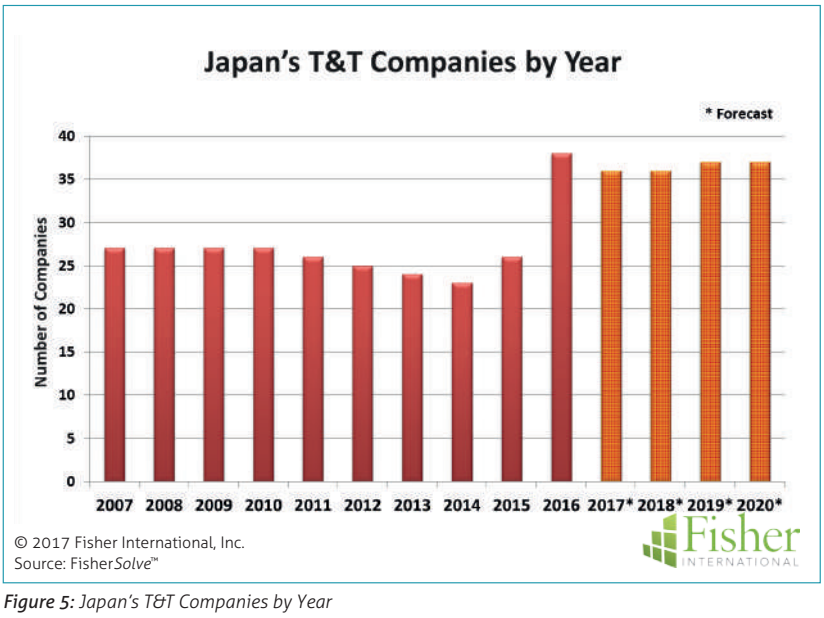


Figure 5: Japan's T&T Companies by Year

expansion. In the past 10 years, Asia Pacific T&T has been growing at a cumulative average growth rate (CAGR) of 15%. Capacity today is nearly four times what it was in 2007. The number of operating sites more than doubled in that 10 year period and announcements suggest the trend will continue for the near future (Figure 2).

If we get granular and look inside the region, it is obvious that China is driving the regional growth (Figure 3). Back in 2007 China and Japan had nearly the same capacity. By the end of 2016 the share of capacity picture has changed dramatically.

Capacity today is nearly four times what it was in 2007. The number of operating sites more than doubled in that 10 year period and announcements suggest the trend will continue for the near future.

The Japanese economic growth uptick in 2013 seems to have stimulated the T&T industry as well. Operating sites in Japan have moved off a flat growth pattern and increased dramatically to the point of nearly doubling the number of sites in the past three years (Figure 4). During this spike, capacity has grown at a CAGR of 15%+ from close to zero (0.42%) in the 2007 to 2013 period.

Some of the subsequent growth came from existing mills but the real capacity increase came from upstart T&T companies bringing new production online beginning in 2014 and increasing through 2016 (Figure 5).

The new companies built new sites doubling the portfolio and it appears some additional sites are being planned for 2018-2020 (Figure 6). As you might expect, the paper machine count nearly doubled over the same period (Figure 7).

Figure 8 is a summary of the 160+ operating T&T paper machine assets in Japan. Paper machine installation dates range from 1950 vintage to recent installations in the past two years. The median installation year is 1986. Technical age is perhaps a better indicator of age (it includes age adjustments attributed to rebuilds over time as tracked in Fisher*Solve*™). The oldest machine has a technical age of 62 years while the average technical age is 30 reflecting recent installs that

By Fisher International's **Bill Burns**

Japan's T&T machine speeds are conservative compared to best practices standards but not atypical for Asia Pacific. The slowest machine is 178mpm which is not competitive beyond very specialized paper products. The maximum speed is 2,050mpm a very respectable modern-day machine speed.

are less than two years old. So it appears there is less activity in the form of major rebuilds than new installations.

Japan's T&T machine speeds are conservative compared to best practices standards but not atypical for Asia Pacific. The slowest machine is 178mpm which is not competitive beyond very specialized paper products. The maximum speed is 2,050mpm a very respectable modern-day machine speed. Average speed is 911mpm which means the portfolio is slow by today's standards.

Trim widths are also narrow by today's standards. The average is 2.6 metre with the narrowest machine being 1.1 metre (these are very narrow machines). The wider 6.1 metre machine would be more consistent with the bulk of machines being installed today. As a reflection of the size and speed of these machines, Japan on average has an asset portfolio that is very modest in capacity. This may be cost effective in small local markets where access or transportation costs are big factors. In larger markets with more capable competitors the modest machines could become non-competitive very quickly.

Cumulative Cost Curves are a good analysis method for thinking to the future and potentially increasing country to country competitiveness. The Asia Pacific Region is a fairly homogeneous market for T&T products. With respect to capacity in the region, China dominates with Japan and Indonesia representing much of the remaining production. Yet, China's cost position does not match its capacity dominance. Indonesia is appreciably more cost competitive than China or Japan thanks to low energy costs. Japan is cost disadvantaged compared to the other two countries but not significantly higher than China (Figure 9). Japan's significant disadvantage stems from energy costs (Figure 10). Being an energy poor country makes this drawback difficult to overcome. Japan does have an advantage over the other two countries where fibre cost is concerned. This is

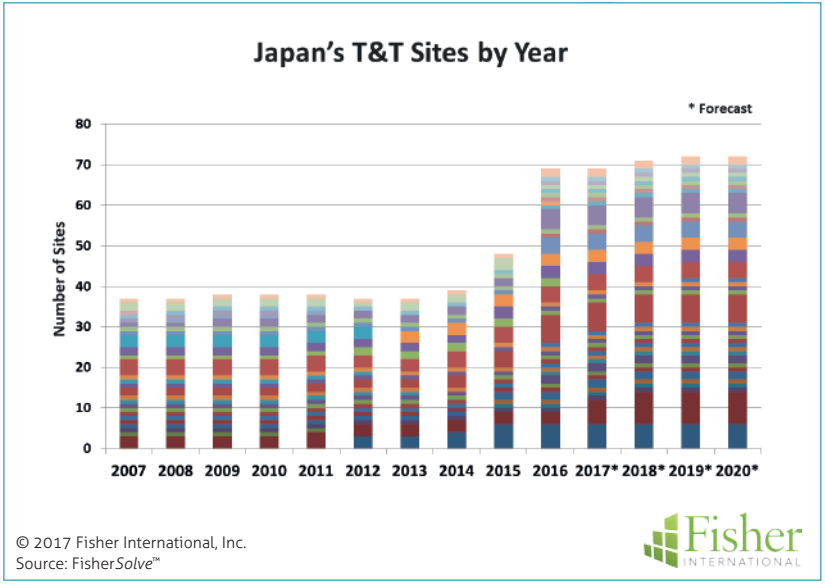


Figure 6: Japan's T&T Sites by Year

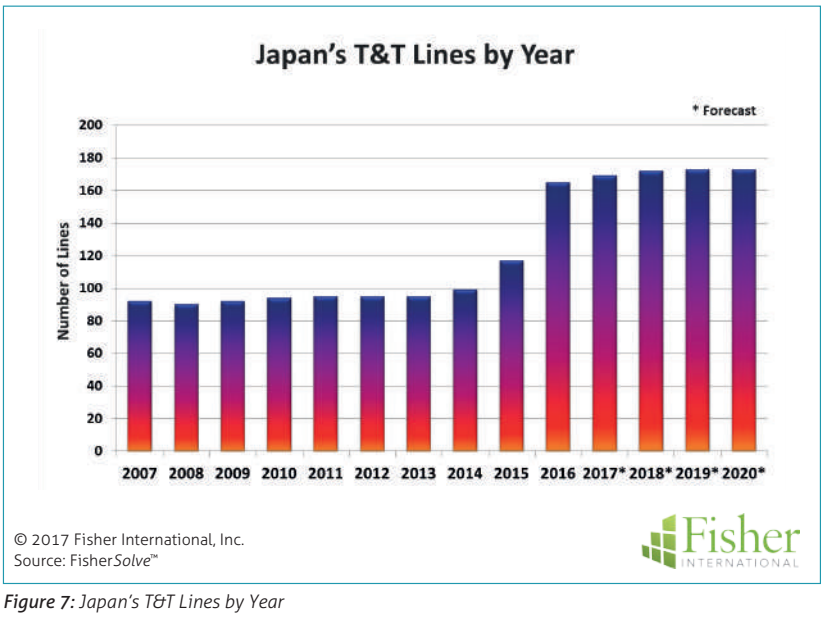


Figure 7: Japan's T&T Lines by Year

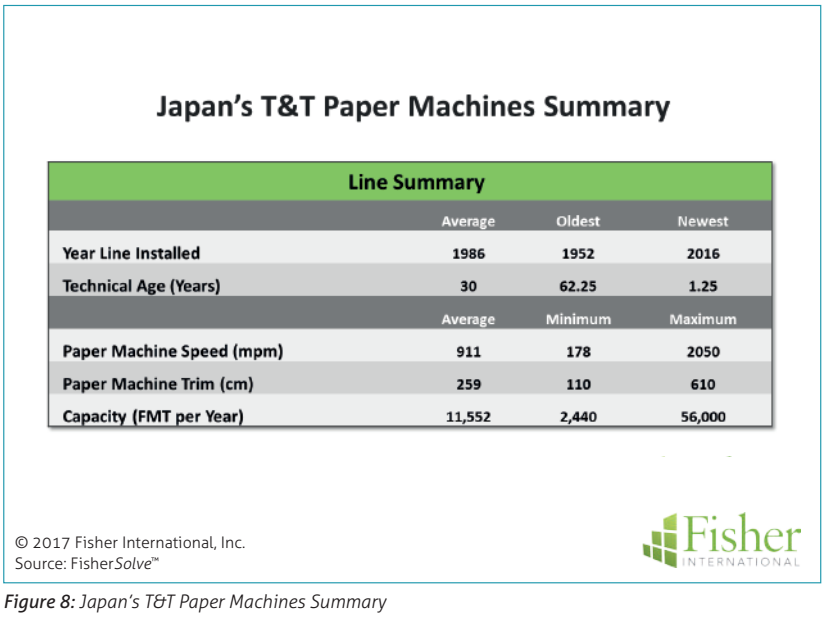


Figure 8: Japan's T&T Paper Machines Summary


FABIO PERINI
KÖRBER SOLUTIONS
Weareable™
WHAT YOU SEE IS WHAT WE KNOW
CONNECT OPEN A CUSTOMER SERVICE REQUEST
WEAR SET UP WEAREABLE SUPPORT DEVICE
FIX HANDLE YOUR MACHINES TOGETHER WITH US
VISIBLY MORE
www.fabioperini.com
KÖRBER

By Fisher International's **Bill Burns**

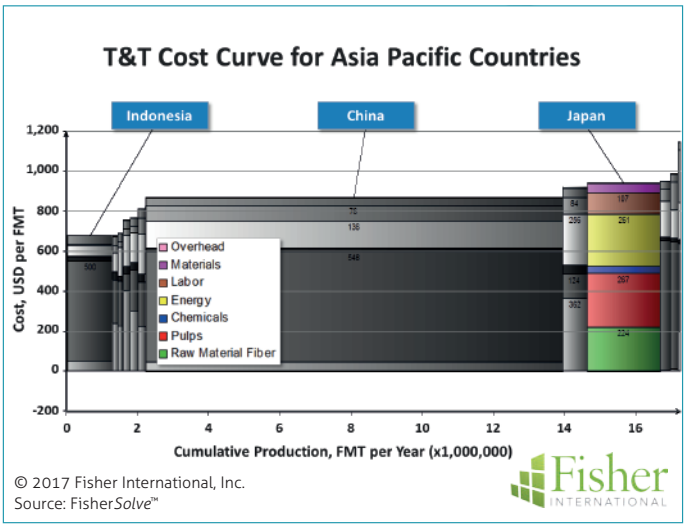


Figure 9: T&T Cost Curve for Asic Pacific Countries

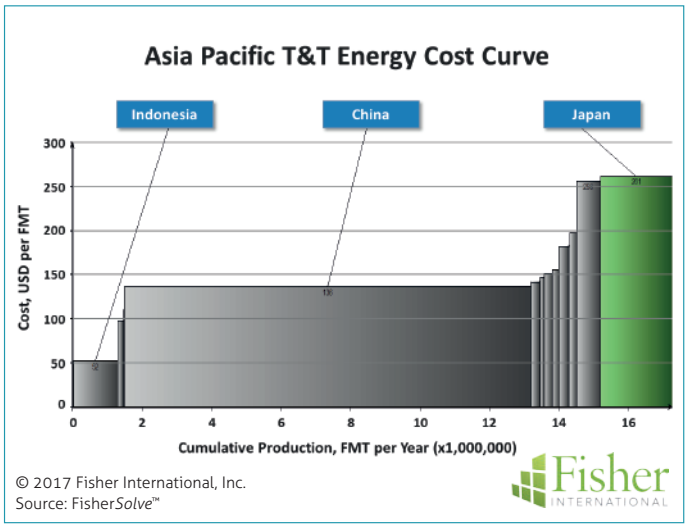


Figure 10: Asia Pacific T&T Energy Cost Curve

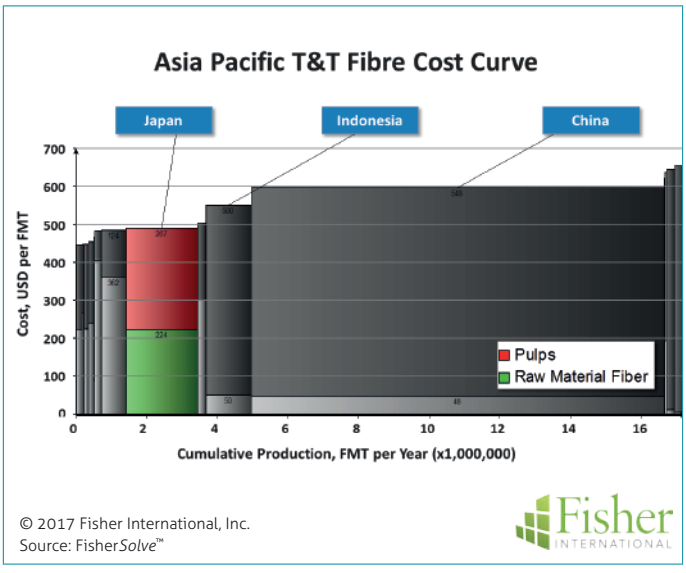
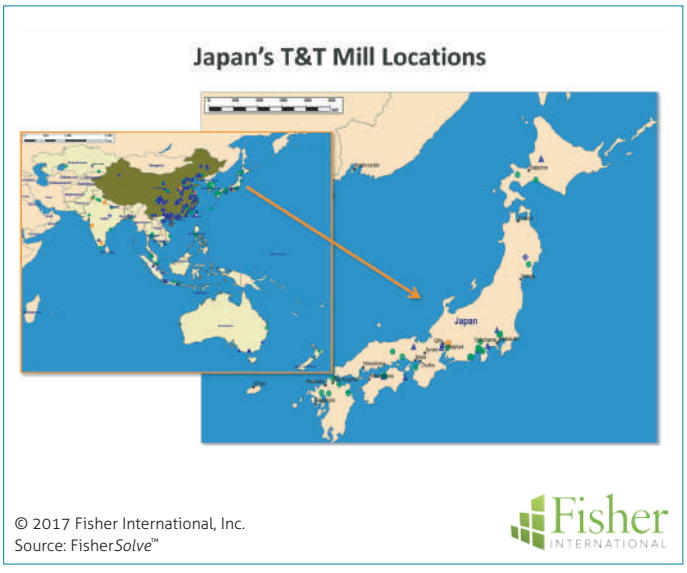


Figure 11: Asia Pacific T&T Fibre Cost Curve



Map: Japan's T&T Mill Locations

Japan's T&T business is enjoying the benefits of economic recovery policy in the country showing strong growth for the three years after stimulus measures were put in place. Growth is coming in the form of new entries in the market.

attributable to the use of recycled fibre which delivers a cost advantage over China and Indonesia who rely much more heavily on virgin purchased pulp (Figure 11).

In summary, Japan's T&T business is enjoying the benefits of economic recovery policy in the country showing strong growth for the three years after stimulus measures were put in place. Growth is coming in the form of new entries in the market. The new entrants appear to be local-market driven consistent with the past. Investments and the overall asset portfolio are well suited for smaller, limited-size markets. This asset strategy may be difficult if the market becomes more international in the future since Japan's cost position is not strong among likely regional competitors.

The source for market data and analysis in this article is Fisher*Solve*™.

About Fisher International, Inc.

Fisher International supports the pulp and paper industry with business intelligence and strategy consulting. Fisher International's rich databases, powerful analytics, and expert consultants are indispensable resources to the industry's producers, suppliers, investors, and buyers worldwide. FisherSolve™ is the pulp and paper industry's premier business intelligence resource. Complete and accurate, FisherSolve is unique in describing the assets and operations of every mill in the world (making 50 TPD or more), modeling the mass-energy balance of each, analysing their production costs, predicting their economic viability, and providing a wealth of information necessary for strategic planning and implementation. FisherSolve is a product of Fisher International, Inc. For more information visit: www.fisheri.com or email info@fisheri.com USA: +1-203-854-5390

Can tissue demand in the AfH space compensate for limited retail growth opportunities in Japan?

Hiromi Yamaguchi

Senior research analyst, Euromonitor International

As one of the most developed economies in the world with a declining population, Japan shows limited volume growth opportunities for FMCG products in general. Tissue products are no exception. With 2016 retail tissue volume at over one million tonnes sold and estimated unmet potential of less than 400,000 tonnes, tissue manufacturers such as Nippon Paper Crecia, Oji Nepia and others have actively invested in value-added product features, especially in facial tissues and toilet paper.

At the same time, manufacturers can look for opportunities in the AfH segment for volume expansion, especially in view of the upcoming 2020 Tokyo Olympics.

Slow volume growth and limited opportunities in retail

Retail tissue market in Japan recorded a marginal volume decline in 2016, in large part due to the declining population. In a developed market like Japan, where tissue products are well-established and widely available at affordable prices, the retail volume growth largely depends on population growth.

The country's population began to fall around 2009. In 2016 it stood at 126 million. Furthermore, in 2016 the number of those over 65 years amounted to 34.6 million, or 27.4% of total population. The share will rise to 31.5% by 2030. The government forecasts that 40% of the population will be of retirement age by 2050.

The fertility rate was 1.6 births per female in 2016 and is expected to remain at that level through 2030. The steady decline and ageing of Japanese society is a significant drag on economic performance.

Taking the path of premiumisation and innovation along the lines of value-added products with improved functionality becomes an important strategy to drive the industry growth in the face of unfavourable demographic trends.

The two key product categories in Japan's retail tissue are toilet paper, accounting for 73% of the total retail tissue volume in 2016, and facial tissue, accounting for 19% of retail tissue volume sold in 2016. Both experienced sluggish volume growth over the past few years, with value seeing a somewhat better performance supported by value-added products.

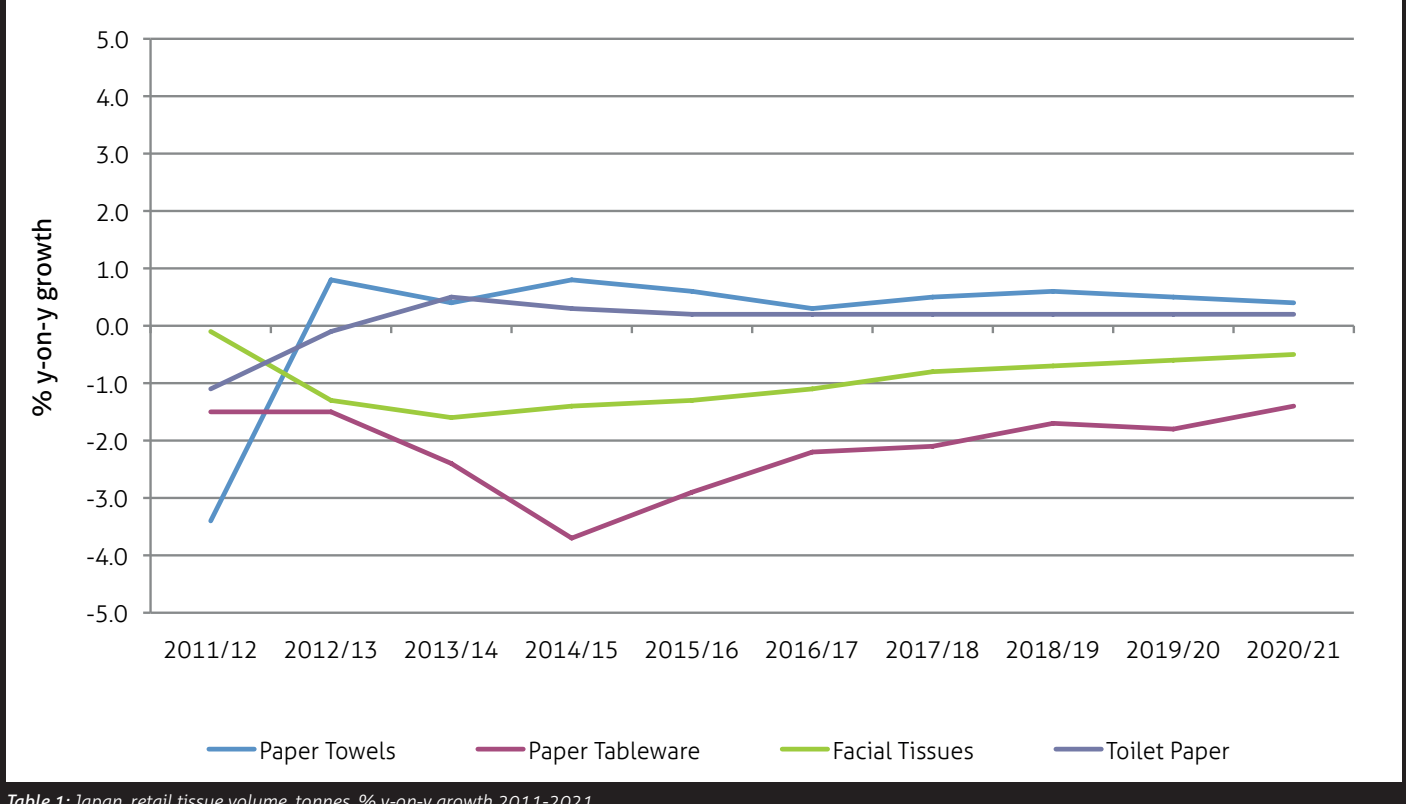


Table 1: Japan, retail tissue volume, tonnes, % y-on-y growth 2011-2021

By Euromonitor International's **Hiromi Yamaguchi**

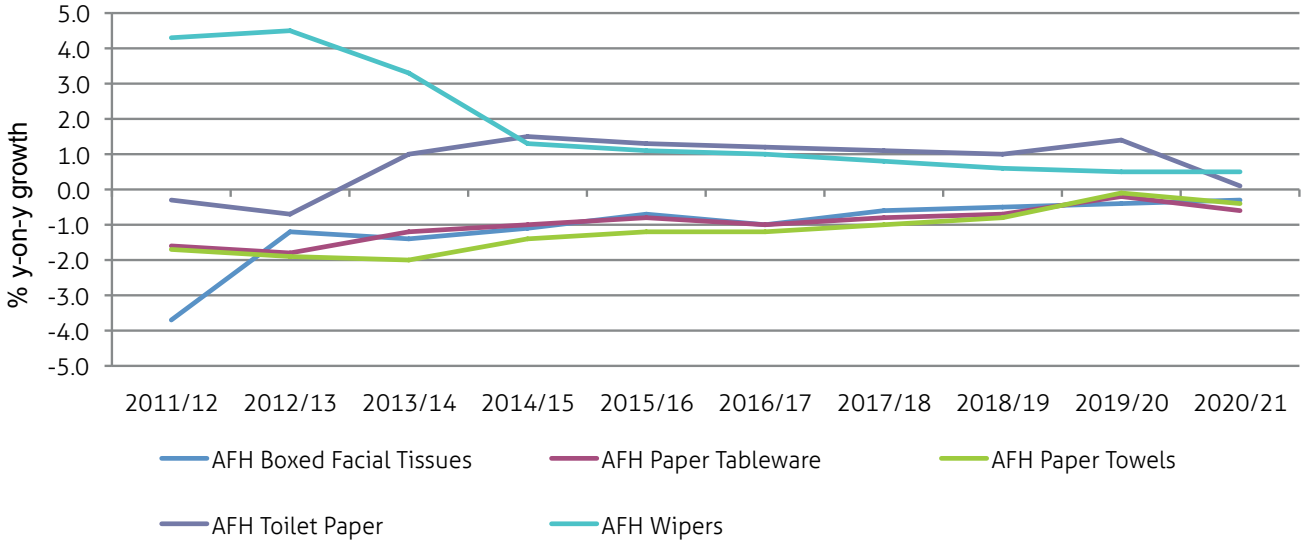


Table 2: *Japan, AfH tissue volumes, tonnes, % y-on-y growth 2011-2021*

In facial tissue, for instance, premium products with lotion are popular in spring due to widely spread hay fever, or allergic rhinitis. In fact, some consumer surveys indicated that over a quarter of the population in Japan is allergic to cedar pollen, which spreads widely in the spring.

Facial tissue impregnated with lotion is preferred by consumers with cedar pollen allergy to avoid skin irritation that frequent use of regular tissues can cause. On the other hand, regular facial tissues are often used in Japan for multiple purposes, including wiping tables. Kitchen cleaners such as Kabi Killer from SC Johnson & Son take full advantage of such tendencies in tissue use. The Kabi Killer's bottle closure is designed to efficiently release the contents onto tissues that are used to clean surfaces.

Increase in tourism vs bathroom technologies

In contrast to the struggling retail category, tissue consumption sees some growth opportunities in the AfH segment, supported by the increase in the number of foreign travellers to Japan.

The latest data from Japan National Tourism Organization indicates that the number of inbound tourists to Japan grew from six million in 2011 to 24 million in 2016, recording a whopping 286% increase. Furthermore, the total nights spent by travellers at hotels increased from 162 million to 204 million over the same period of time, recording a 25% increase according to the Travel & Tourism data from Euromonitor International.

The rise in the number of international tourists renders some support to the demand for AfH tissue products, especially at hotels. Thus, for instance, over 2011-2016, the volume of toilet paper in the AfH space grew 1% CAGR, compared to a marginal decline for the category in retail over the same period.

However, AfH tissue products do face a number of challenges in Japan, chiefly stemming from technological advancements and the evolution of modern bathroom facilities in the country. Japanese toilet seats are quite sophisticated and come equipped with a number of functions and the latest in bottom cleansing technology.

The toilet models feature not only water cleansing but also dryers, which have an adverse effect on toilet paper usage. Additionally, in Japan, hand dryers have become a standard feature in bathrooms, making paper towels rather obsolete.

Looking towards 2020

Continuing penetration of technology into modern bathrooms in Japan is the reason why the growth in tourists does not directly translate into the same level of heightened demand for AfH tissue. Nonetheless, there are some growth opportunities in the AfH space that can help to support consumption of tissue in Japan. These include a further increase in the number of tourists as Tokyo prepares to host the Olympic Games in 2020. Japan Tourism Agency is actively involved in improving the tourism industry infrastructure, with the expectation of welcoming an estimated 40 million inbound tourists in 2020. The increasing number of international tourists can favourably affect the usage of tissue products in the AfH channels. The industry players will, however, need to come up with creative solutions to increase usage of tissue for hygiene purposes, as technologically advanced bathrooms, now also equipped with standardised symbols to ease concerns of non-Japanese visitors, will continue to challenge toilet paper – the largest product category within both retail and AfH segments in Japan. Further premiumisation of tissue to drive revenues, while exploring multiple uses and applications of tissue to drive volume, will be increasingly on the agenda.

By Tissue World senior editor **Helen Morris**

Universal Paper is gearing up for a move into Japan's growing premium tissue market

The APP Group company's success has been in the economy segment with 9.4% of Japan's T&T sector last year. Now its key strategy is to follow younger consumers who want the highest quality. A TWM report.

TWM first visited Japan to meet its impressive tissue industry in 2013. Meetings with mills including Doh-Ei Paper, Ehime Paper and Oji Nepia revealed a wide range of issue facing the companies and resulted in an insightful report on a country whose tissue market continues to be a blueprint for many around the world.

Since then, a lot has changed. Demand for tissue in a country that places such high value on hygiene is still very evident; Japan's 127 million population is the 11th largest in the world and offers immense potential and pulling power for new and local tissue players alike. The baby boomer generation continues to move rapidly into retirement, while the younger generation is requesting more and more high quality products that it's willing to pay for. Such demographics offer a wide range of changing opportunities and challenges and as a result, tissue companies have had to undertake a generational shift amidst their market strategy.

New tissue machines are expected to be up and running next year, including the start-up of market leader Daio's Voith-supplied TM in October 2018.

Helen Morris

Senior editor,
Tissue World magazine

Japan's potential has also attracted companies from outside the country and they continue to enter the market, creating an even fiercer competition. Universal Paper – the Japanese company of Indonesian tissue giant Asia Pulp & Paper (APP) - is one such

Demand for tissue in a country that places such high value on hygiene is still very evident; Japan's 127 million population is the 11th largest in the world and offers immense potential and pulling power for new and local tissue players alike.

High potential: *Japan's advanced tissue market has attracted non-domestic players such as Universal Paper*

By Tissue World senior editor **Helen Morris**

company, and it entered the Japanese tissue market in 2008 where it now sells APP's tissue products.

TWM met president Akinori Owaki and his colleagues Alexander Winardi, general manager, and Ryuhei Ohara, corporate planning, all three of which are personable and have excellent English, at the company's headquarters in the middle of the bustling and magnificent Tokyo.

The setting of the company's headquarters is a key influencer for its tissue products. Tokyo is home to 13.8 million people busy living and working amongst streets lined with neon lights and temples, alongside an ever-increasing and steady influx of tourists. Its fast-changing demographics are a key driver of the changing demands and trends for the whole tissue market.

Owaki says APP is in Japan to provide products that consumers need in one of the most important tissue markets in the world.

We discuss the well-known concerns about the challenges in the country. Japan has an ongoing social issue because of its shrinking population - the number of elderly continues to steadily increase whilst there is an increasingly smaller birth rate (just 1.46 births per woman in 2015). This is impacting the economy as well as consumer spending. However, unemployment is stable at 3.1%, and the company expects the exchange rate to remain strong. Yet as the USA policy's interest rate increases, the Japanese Yen may depreciate.

Tokyo is home to 13.8 million people busy living and working amongst streets lined with neon lights and temples, alongside an ever-increasing and steady influx of tourists. Its fast-changing demographics are a key driver of the changing demands and trends for the whole tissue market.

Last year, Universal Paper had a total market share of 9.4% in Japan's tissue and towel sector, while for the household product tissue sector it has a 5.4% market-share: "We are going to jump this year, we are growing a lot," Owaki adds.

"Our sales volume grew 10 times in the last seven years here and we are the fastest growing player in Japan."

Universal Paper's finished products are currently sold in the economy segment, but that's all set to change: "In the past, we have only fought against the economy segment here in Japan and we have a solid market-share there.

"However, our key strategy now is to move into premium tissue." Owaki adds that more and more Japanese people want higher quality products: "Quality of the product and the brand is so important here."

The Japanese household paper market growth is less than 2%, with shipments to hotels and commercial facilities on the rise. This is all supported by a boom in tourism, and increasingly, residents are also stocking up for disasters. The sector is made up of toilet paper, facial tissue, kitchen towel, incontinence products and napkins.

"More than 50% is toilet roll, and this is a product of the competition here in Japan," Owaki adds. Buyers of these products are now generally either rich or poor: "In the past, Japan had a well-established middle class.

"Now, it's decreasing as the rich are getting richer and the poor poorer. It is becoming more like the US and the UK in that respect, and the options in the tissue market reflect that: it's either premium or lower mainstream, there's no middle. Especially the young, female Japanese, they care more and more and they're willing to pay for a good product."

Recent merger and acquisition activity amongst domestic players is also having an impact. Japan's leading producer of toilet paper Daio recently acquired fellow domestic player Nisshinbo Paper Products, a subsidiary of

Growth strategy: *Universal Paper's sales volume grew 10 times in the last seven years*

By Tissue World senior editor **Helen Morris**

Evolving trends: *innovation is key, and more and more premium products are distinguished with lotions, softpack and packaging*

Nisshinbo Holdings, the country's sixth largest player.

Nisshinbo Holdings operates two in the Shizuoka prefecture that produce tissue, a facility in Fuji that produces 28,00tpy and a Shimada mill that produces 40,000tpy.

Internally, Daio is also planning on expanding its tissue production with a new Voith-supplied 4,500 tonne per month machine, which is expected to start in October next year.

The acquisition of Nisshinbo gives Daio a 32% share of the toilet roll market and the move will increase its capacity to supply a still-growing household paper market that is forecast to reach a record volume in 2017.

"How we can make things differently from the competitors is key. We will keep exploring this, and how we can differentiate ourselves from our competitors," says Owaki.

In the household segment, the second player is Nippon Paper Crecia and then third is Oji Nepia, with Universal Paper at number four along with competing tissue company Kamishoji.

The remaining are 60-70 small-to-medium sized tissue players, many of which are in the recycled toilet roll market. Universal Paper doesn't sell recycled products, focusing on pure pulp products instead.

"Universal Paper currently relies more on selling facial tissue (63%). Another key sector is plastic-packaged tissue (softpack tissues), and Universal Paper has launched innovative plastic-packaged products into the Japanese market:

"We are the number one softpack seller in Japan. We launched that product here; cost wise, general benefit wise and environmentally, it makes more and more sense to push this category, to change the market here in Japan. We are focusing on this soft pack and the toilet roll market to grow."

The company expects to see more growth in the AfH sector, with hotels and restaurants busier than ever with local consumers and tourist.

"The tissue industry here in Japan is very conservative, especially against newcomers. If we lower our prices, they will lower theirs also, so we try to hold the price. Japanese tissue has some of the lowest prices in the world.

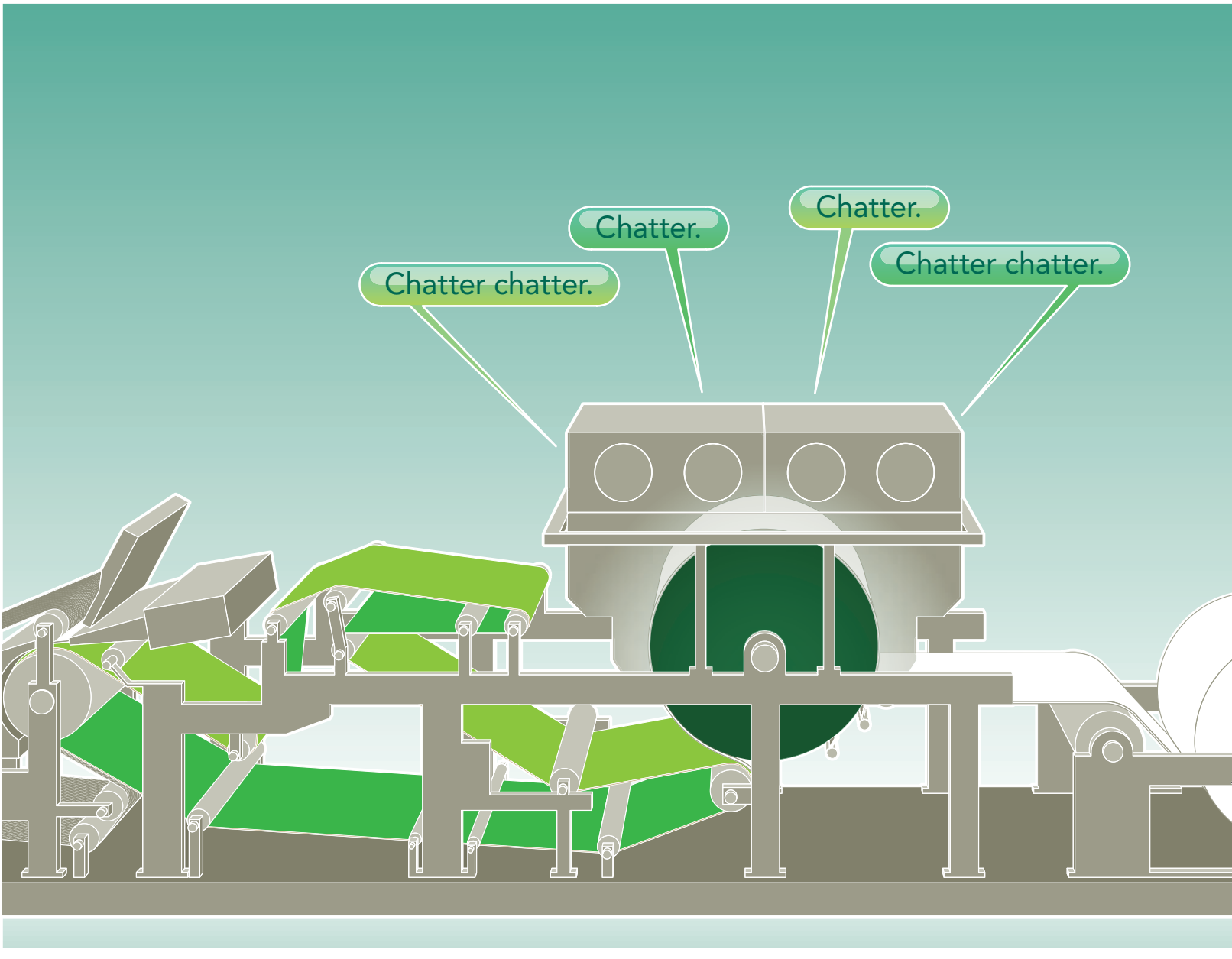
"It used to be not so cheap, but because of the competition, thirty years ago, the market price was double. After twenty, thirty years of competition, the price has halved."

He adds the Japanese market is still "very attractive" for the business, simply because of its size. "It's almost two million tonnes – the US and China are bigger than us. The usage per capita is also second highest in the world and that's why companies are still investing and it's why we are continuing to invest in the Japanese market."

"Even though we're a foreign player, we are here to stay and we want to build our brand here. Hopefully APP in Japan can continue to contribute to our global growth."

"The Japanese market is still very attractive for the business, simply because of its size. It's almost two million tonnes – the US and China are bigger than us. The usage per capita is also second highest in the world and that's why companies are still investing and it's why we are continuing to invest in the Japanese market."

Akinori Owaki



What's all the chatter about?

If your conventional hard and thin Yankee coating causes blade chatter, switch to Buckman's Bubond® Yankee adhesive. Bubond Viscoelastic coatings help prevent chatter to protect the Yankee and increase blade life. Bubond adhesives are formulated to improve sheet to Yankee intimacy through the pressure roll nip which results in more efficient heat transfer. As a tissue maker, you can get better drying efficiency, crepe structure, improved softness and better Yankee protection.

Cut the chatter and get down to business.
Contact your Buckman representative or visit **buckman.com** to learn more.

Buckman

By Tissue World senior editor **Helen Morris**

Surge in tourists hiding the effects of Japan's declining population

Tissue facing a challenge and an opportunity says JP Corelex Holdings president Mr. Hiroshi Kurosaki. Production balanced against demand is the key. Report by TWM senior editor Helen Morris.

The first thing TWM notices on touchdown during summertime in Tokyo is the heat. Even at 7AM, the humidity is well on its way. Once inside the taxi to get to our hotel, one of the many helpful bits of information the taxi car provides for its passengers is a detailed weather forecast: it's an impressive 36 degrees outside, and thunderstorms and hail are on the way.

We're in Tokyo to meet the president of JP Corelex Holdings, Mr. Hiroshi Kurosaki. He collects TWM from the hotel and, in good English that he learned from a year spent in Seattle, we drive along busy, traffic-jammed roads full of commuters to Kawasaki, south of Tokyo, where the company's San-Ei tissue site is based.

It's located in an emissions-free zone and has an impressive 180-degree view across Tokyo Bay, which pans the coasts of Tokyo, the Kanagawa Prefecture and the Chiba Prefecture. Tokyo Bay is also connected to the Pacific Ocean by the Uraga Channel and, along with the magnificent city of Tokyo, it makes an ideal location for a tissue plant.

During our drive, the colour TV in Mr. Kurosaki's car is blasting out coverage of a variety of debates involving Japan's politicians. Mr. Abe Shinzō, the current prime minister of Japan and president of the Liberal Democratic Party, is being discussed. There is some eye-rolling in our car.

Our talk turns to Donald Trump, followed by a pointed question about what exactly the British were thinking when they voted for Brexit. China is next, and we discuss how the giant is slowing its place a little... and what could happen next.

Hearing Mr. Kurosaki's global and local perspective on politics and the tissue industry is fascinating. Coming from an island nation that has always punched above its weight, he discusses how tissue trends in Japan, a country where hygiene and tissue product use are so popular and wide-spread, is now seeing low volume growth and suffering from a population decrease.

The country's tissue market shares many similarities with trends in Britain and other western countries; namely steady but low growth, with limited retail growth opportunities. In many ways, Japan has set the standards for tissue globally in terms of its high-quality products, and the situation it finds itself in now serves as a warning for many markets globally.

Back in our car, just before arriving at the San-Ei mill we stop off at the site's waste paper disposal area and Mr. Kurosaki adds some waste paper from his home to be recycled: "Everything is money!" he adds.

Helen Morris

Senior editor,
Tissue World magazine

> "Our economy was very pessimistic ... it's a little bit better now. But still we are facing deflation. Fortunately for our market, everyone uses tissue, so compared to other industries it's a good market to be in."
>
> Hiroshi Kurosaki

The site produces recycled toilet paper for the domestic market and has one paper machine, and converting lines. Previously family-owned, as of April 2011 JP Corelex Holdings operated as a subsidiary of Japan Pulp & Paper Co, a Japanese-based trading company.

Sister sites include the Hokkaido-based Corelex Doh-Ei Co tissue mill, Corelex Shin-Ei in Shizuoka, as well as a new recycled household paper mill that has started-up in Fuji in 2016.

It has adopted state-of-the-art energy efficient equipment to improve quality and increase production efficiency.

It also works in conjunction with the Corelex Group's San-Ei Regulator – Tokyo mill to achieve the maximum possible reduction in waste and create

The site produces recycled toilet paper for the domestic market and has one paper machine, and converting lines. Previously family-owned, as of April 2011 JP Corelex Holdings operated as a subsidiary of Japan Pulp & Paper Co, a Japanese-based trading company.

By Tissue World senior editor **Helen Morris**

a quasi-zero emission system as part of its efforts to reduce its environmental footprint. A disaster management agreement was also signed.

Corelex also has a sister company in Vietnam, and TWM met Mr. Masahiko Nagata, the Japanese general director of the impressive Hanoi, Vietnam-based tissue producing sister company in 2016 for that issue's Country Report.

Mr. Kurosaki says demand for tissue in Japan is increasing, at around 1.5-2% year by year: "The population is decreasing here, but we are seeing more and more visitors, especially from China. They are providing a lot of potential for our market."

> "The population is decreasing here, but we are seeing more and more visitors, especially from China. They are providing a lot of potential for our market."
>
> Hiroshi Kurosaki

But Japan's ageing and decreasing population is a big problem for the country: "Maybe five to 10 years from now, our population will decrease even further. It's a very substantial issue for us."

He adds it is an opportunity as well as a challenge for the country's tissue market: "It is an opportunity for us in many ways, but it also depends on the companies.

> "Many say the volume of waste paper is decreasing because everyone is now using computers instead of paper. But because we have invested in our facilities, we are able to use the paper that is no longer useful, paper that is of low quality."
>
> Hiroshi Kurosaki

"If mills are increasing their production here, that may be a problem. At the moment, not many companies are increasing their production. So if it stays level like this against demand, maybe we can enjoy it. Now however, the sales price isn't increasing, so we are stuck."

The San-Ei mill uses waste paper, including what he describes as confidential papers, the kind which customers "would previously just burn up and throw away." Sourcing the material can sometimes be tough, but the company then buys it if it's not available:

"Many say the volume of waste paper is decreasing because everyone is now using computers instead of paper," he says. "But because we have invested

Domestic target: *The site's 54,000tpy of tissue is increasingly being used to meet demand from tourists in Japan*

mTORRES TISSUE

Visit us at **STAND 114** and open house in our facilities

MIAC

The highest **flexibility** & **productivity**

www.mtorrestissue.com
info@mtorrestissue.com

MTORRES TISSUE
Via Del Brennero 1040
Lucca,55100 Lucca (Italy)
Phone: (+39) 0583 490 461

By Tissue World senior editor **Helen Morris**

> "APP already has a converting presence in America. It's substantial. According to my experience, the big players in America such as Georgia-Pacific and Kimberley-Clark, they cannot produce enough volume for the demand, so there's still actually a shortage of supply against the total demand."
>
> Hiroshi Kurosaki

in our facilities, we are able to use the paper that is no longer useful, paper that is of low quality.

"Our parent company was a machinery company, so we picked up a lot of information and technology from that."

Most products are targeting the middle market as the high-quality tissue products are made with virgin pulp. A lot are for the private label market, and the company supplies Japan's largest supermarket AEON:

"Almost all of their waste paper product is supplied by us," he adds. Some 15% of products are targeting the AfH market, in particular the San-Ei mill with its proximity to Tokyo.

The mill's located in a zero emission industrial park is "very important for us.". "We're using the waste paper and it makes the whole process much more efficient. We've been zero-emission for 15 years and we aim to be self-sufficient."

Generally, he adds, there's not much demand for environmental certifications such as FSC from consumers in Japan: "We're not seeing much demand for this, but some of our mills are FSC and this mill here is preparing for it.

So far FSC is being requested from consumers, but we have experience with how it is in the US and in Europe. The Japanese consumer, it's not very popular here, they're not very interested in that here in Japan."

The site produces around 54,000tpy and is using over 6,300 tonnes per month of material to make this.

The new Fuji mill will also produce 54,000tpy; he adds the company has no need to increase its capacity further in the near future because demand isn't increasing enough to make that investment.

"Other companies are also bringing new capacity on stream next year. It is big capital and will mainly be producing virgin pulp products."

Demand generally is around 1m tonnes per year for toilet paper: "Of that, around 65% is made from waste paper," he says. "For sanitary paper, 1.7m tonnes are produced per year and 0.7m tpy for facial tissue."

Corelex's company share is around 35% of the 65% waste paper market. "When our company was established years ago, at that time there were many small toilet paper companies appearing, around 20-30 mills.

"But they have no ability to use the machine and maintenance that we do, they are using very old machines. While they're still surviving, maybe in the near future those companies won't be around."

In terms of competition from Japan's giant of a neighbour, he sees little of Chinese companies in Japan's tissue market:

"Maybe only Asia Pulp and Paper is here as Universal Paper, their mother rolls are already coming in from their sites in Indonesia and China.

"Maybe APP wants a mill in Japan. We see them trying to get the market share very quickly. And they wait for China's tissue demand, but demand there is slowing a little.

"APP already has a converting presence in America. It's substantial. According to my experience, the big players in America such as Georgia-Pacific and Kimberley-Clark, they cannot produce enough volume for the demand, so there's still actually a shortage of supply against the total demand.

"So there is some space to sell, there is room for APP to sell into each market. Like in Europe also, they can't oversupply there. But in Asia, they supply very quickly and they are preparing the capacity quickly. That's the problem."

He adds that society in Japan is "fluctuating and moving quickly". "Our economy was very pessimistic .. it's a little bit better now. But still we are facing deflation.

"Fortunately for our market, everyone uses tissue, so compared to other industries it's a good market to be in. Everyone all over the world apart from a few countries that use water use tissue, so demand is always increasing globally."

As for Japan, where tissue demand isn't increasing dramatically, he says any current increase in demand is because of tourists: "If visitors stop coming, that increase will stop also as the Japanese population continues to decrease. We'll see an automatic decrease in demand for tissue products then."

"Fortunately for our market, everyone uses tissue, so compared to other industries it's a good market to be in. Everyone all over the world apart from a few countries that use water use tissue, so demand is always increasing globally."

Hiroshi Kurosaki

ASIAN PAPER Bangkok

TISSUE WORLD Bangkok

6 - 8 JUNE 2018

BITEC, Bangkok, Thailand | Trade Show & Conference

Two premier industry events offer the best of both worlds

The complete value chain, combining pulp, paper, tissue, packaging and related industries - all in one place!

Portfolio
TISSUE WORLD

Organised by
UBM

Official Publication
TWM
TISSUE WORLD MAGAZINE

www.asianpapershow.com
www.tissueworld.com

Tissue ... the perfect canvas for capturing life's perfect moments

Claire Bowen is a Perth, Australia-based blogger, dramatist and self-described "leftie feminist greenie" who studies the impact of popular culture on the historical record.

I'll let you in on a secret – I keep all kinds of tissue products long after the use they were provided for has passed, and some tissue products I have kept for over a decade now. And no, I am not a hoarder or a collector, but a storyteller and traveller who has been gifted art on the nearest easy canvas from all manner of artists.

These beautiful sheets have been treasured for the many memories they carry, and their longevity speaks to the enduring power of paper to persevere.

Along with most people, I dispose of used toilet paper, tissues and kitchen paper rolls in my day-to-day life as they wipe clean and dispense comfort, and are then discarded. But every now and again a piece of paper becomes the canvas for something innovative or evocative that I wish to keep, and they form a beautiful tapestry of tissue from across the world.

I have an intricate rose made of a paper napkin given to me in Greece on the last night of a two-day romance on an Aegean island. The creator was used to visitors coming in and out of his life, but he was the only Greek dispenser of napkin roses I met, so the rose lies, flat and pure as Mediterranean sand, alongside ferry tickets in a travel guide. It was a strong napkin, plush and soft.

I have a kitchen towel, perforated and quilted, that has an extraordinarily detailed map of New York City on it, drawn at a London house party by a homesick American writer who is now a YouTube animation sensation.

On one side of the towel is his precise drawing of his much-missed hometown, and on the other the terrible drawing that had prompted his own, my impression of what I thought Manhattan looked like.

I don't want to claim to be the inspiration for his YouTube Education channel that used animation to dispel myths, but you can draw your own conclusions.

I have the inspiring advice of a Siberian Philosopher on the back of apple tea wrap from a tea stop in the Grand Bazaar in Istanbul; my favourite being 'all the world is a pot, and you are the spoon'.

My main art collection at the moment is of faces drawn by an artist on napkins, menus and receipts from our European bar crawls, and I have a note left in all her three languages by this lover, who could only find the hostel toilet cover to use as she left for her early flight to the other side of the world.

I have a lot of thin paper that hold the memories of large emotions for me, and now I have to find a tissue because memories, hey?

I have photos of intricate patterns drawn across paper tablecloths as a friend and I plot world domination over suburban yum cha, and my favourite saved wrapping paper comes from a friend whose day job was to sell packages to Euro Disney.

She spent a day on the phones writing Disney Corporate Catchphrases in calligraphy – this masterpiece is safe with me, I assure you – every 'close to the magic' and 'in the magic' is treasured.

So next time you consider that roll or box of tissues, think of the world it came from, and how it will fit into your world, but also keep in mind that an artist may pick up that extraordinary piece of canvas and capture emotions on it for another delighted human. There is much more to tissue than we talk about.

I have an intricate rose made of a paper napkin given to me in Greece on the last night of a two-day romance on an Aegean island. The creator was used to visitors coming in and out of his life, but he was the only Greek dispenser of napkin roses I met, so the rose lies, flat and pure as Mediterranean sand, alongside ferry tickets in a travel guide.

Delivery economy – centre store online?

By Pöyry Management Consulting director Soile Kilpi and principal Sanna Kallioranta.

The retail sector is going through a transition. Everything can be purchased by a click of a mouse, or a swipe on an app, and get delivered to your doorstep, including tissue and hygiene products.

Major retailers, including Walmart and Target, are fighting against stagnant retail store sales. Based on reports by CNN, there have been 5,300 retail store closing announcements through June of 2017.

The current clip is poised to surpass the worst year on record of 2008, when Credit Suisse counted 6,163 closings. We have all read, observed and contributed to e-commerce being one of the fastest expanding sectors of the US economy at 13%/a growth rate (vs. total retail at 2%/a) and expected to comprise 14% of total retail sales by 2021.

But, what does the growth in on-line shopping mean for tissue products? What tissue and towel products are available online? Who is winning online – brands or private labels?

The Amazon effect... even for centre store consumables

Amazon has grown to be the seventh largest retailer in the US, growing its revenue from $61bn in 2012 to $136bn in 2016 and continues to invest heavily in infrastructure and logistics to serve booming online shopping.

Amazon's chief executive Jeff Bezos has been bundling more services into Prime membership, so that customers can now shop from a reported 50m items, including groceries, household goods, and tissue products, with free two-day shipping.

Amazon offers all bath, towel, napkin and facial tissue products and, true to its value proposition, offers promotions to have the lowest price. Its tissue selection focuses on best-selling brands from the top three branded suppliers with large packaging size, typically 48 roll count in bath tissue. But, Costco's Kirkland brand products are also available through a third party shipper. Interestingly, while Amazon promotes about a dozen core SKU's in bath tissue and kitchen towels, it features over 20 SKU's in napkins, including major brands, Kirkland, and lesser known 100% recycled fibre content products.

The big boys & the big brands

Walmart remains the largest retailer in the US with $365bn US revenue, and its online sales are booming. Walmart's e-commerce sales grew by 63% in the last quarter and its chief executive, Doug McMillon, attributes most of the growth to Walmart.com, not the string of acquisitions it has made (e.g. Jet.com).

Walmart's online portfolio resembles the centre store with a large number of brands and product options (Angel Soft, Bounty, Charmin, Cottonelle, Scott, Quilted Northern, etc.) and two main private labels (White Cloud and Great Value). With its large store footprint (+5000 stores in the US) Walmart is big on "free pick up service" – order online and pick up from your store nearby, no need to leave the car as an associate brings the goods to you. If you want home delivery there is a cost of $5.99 if your order size is below $35, and free delivery is with two day shipping...

Costco is all about large pack sizes and less selection, resembling wholesale concepts. Kirkland private label is well represented with a full portfolio of tissue products, along with well-known brands, but these have a more limited product selection. However, when ordering online you need to plan in advance to go with the free three-five days delivery. Store pick up is not endorsed today, at least on the Costco website. Is this because its store footprint (+450) is much lower than Walmart's?

What about the soft and hard discounters? Aldi's concept is all about smaller stores, larger footprint (2,500 stores in the near future), narrower selection and over 90% private labels. Emphasis is on being a local store. Aldi's on-line shopping and one hour delivery are at a pilot run stage soon in

Soile Kilpi

Pöyry Management Consulting director

California, Texas and Georgia. In addition to Aldi, other discounters and grocery stores with a large store footprint could potentially leverage this kind of omni-channel approach going forward.

Online shopping growth and brands vs. private labels?

According to A.T. Kearny's food and beverage practice estimates, groceries ordered online and delivered to consumers constitute just about 3% of the US market. Online tissue sales are likely to be in a similar range. The Food Marketing Institute estimates that online sales could comprise 20% of total grocery sales by 2025. Millennials are a major driver for the growth in online shopping. According to a 2016 study by Oracle Commerce, 41% of Millennials shop online at least 1x per week vs. 16% of Baby Boomers. And Millennials have surpassed Baby Boomers as the nation's largest living generation, according to population estimates from the US Census Bureau. Furthermore, based on Pöyry's surveys on consumer preferences, Millennials are more likely to use private label tissue products than Baby Boomers, who have better quality associations with branded products.

Demand for private label tissue products has expanded above average in the retail channel and both brands and private labels are positioned to get a boost from online shopping – however, today brands are more visible and are in the portfolio of the big .coms. What is the way forward with private labels? The Millennials are ready to shop.

Tissue and towel sustainability: how next-generation chemicals can enhance sustainable development

By Richard Cho, global marketing director, Solenis. A TWM report.

Sustainability is often defined as a requirement of the current generation to manage resources effectively so that future generations can enjoy a similar quality of life. For tissue and towel manufacturers, the three most vital resources to manage are fibre, energy and water.

In recent years, the industry has been working diligently to refine or introduce technologies that enable mills to drive sustainable development along a number of fronts. Chemical suppliers in particular have taken great strides to be change agents in this effort. Working together, suppliers and mills are implementing innovative solutions that help papermakers responsibly manage fibre usage, save energy, conserve water, and meet safety and compliance requirements — all while increasing production levels and delivering higher-quality products.

A focus on fibre

In certain areas of the world, tissue and towel production still relies on 100 percent virgin forest fibre, though progress is being made every day to increase use of recycled or alternate fibres. For most mills, responsible fibre management now forms the cornerstone of their sustainability programmes and a number of new technologies are enabling greater diversity in fibre sourcing. Recent innovations enable mills to:

- Decrease consumption of virgin fibre. Reduced basis weight papers require less virgin fibre, but they often suffer strength and softness deficits. Dry strength resins help overcome these challenges by delivering supreme flexibility in wet-end systems, enabling higher dry strength while maintaining excellent softness.
- Introduce more plantation-sourced fibres. The use of eucalyptus and acacia can help tissue makers

Richard Cho

Global marketing director, Solenis

In recent years, the industry has been working diligently to refine or introduce technologies that enable mills to drive sustainable development along a number of fronts.

Fibre sourcing: *for most mills, responsible fibre management now forms the cornerstone of their sustainability programmes*

www.futuraconverting.com

Futura. Partners in performance.

Futura is with its clients every step of the way, creating tomorrow's converting solutions through its core values of continuous innovation, superior product quality, dedication to service and long-term partnership.
Best integrated performance and significant competitive advantages guaranteed.

FUTURA

diversify their pulp portfolio, but they introduce their own production challenges. Creping adhesives and release aids minimize dust when using such short fibres while they extend the life of Yankee cylinders and creping blades.

Energy efficiency

Papermakers consume significant quantities of fuel and electricity, making energy efficiency one of the highest priorities for mills looking to achieve environmental targets, cost savings, and improved output. By working closely with their chemical supplier, a mill can implement a range of solutions that target the most energy-intensive aspects of the papermaking process. For example, mills can introduce solutions to:

- Make water drainage more effective. Increasing the effectiveness of water drainage yields lower dryer energy requirements. Advanced retention and drainage aids combine the drainage benefits of traditional microparticles with the fines and filler retention capabilities of micropolymer technologies for superior water drainage. Paper performance additives can also often reduce or eliminate the use of wet-end additives, allowing for more effective water drainage while improving dry strength.
- Improve the efficiency of the Yankee dryer. In any mill, the Yankee dryer represents a significant opportunity for energy savings. Creping adhesives and release aids are designed to provide the desired film rheology over a wide operating window of machine conditions and furnish variables.

Water conservation

Tissue and towel producers, especially those in high water-risk areas, that effectively plan ahead with aggressive risk mitigation programmes, will be well positioned for the future. As partners to papermakers, chemical suppliers have been equally focused on water conservation, both in their own manufacturing processes and in their expanded offerings to customers. As a result, a number of programmes have been developed to reduce freshwater consumption, enabling mills to:

Improving efficiencies: *mills can implement a variety of solutions to help all aspects of the papermaking process*

- Facilitate the operation of closed systems. Closed water circuits can result in deposition problems, but a number of innovations can help papermakers address these issues. For example, pitch and stickies control agents combine the benefits of detackifiers, stabilisers and fixatives to address multiple deposition parameters, and antiscalant solutions help to control the formation of virtually any type of scale.
- Reduce contaminants in wastewater. Wastewater treating and discharge, as well as sludge-waste disposal, represent significant challenges for tissue and towel makers. Luckily, the R&D programmes of chemical suppliers have yielded advanced technologies to address solids removal and reduce COD/BOD in effluent streams. These advances include alkaline-effective biocides, flocculants and bioaugmentation, which involves adding specialised bacteria, enzyme products, or other active biologics to a treatment system.

Sustainability initiatives must go beyond protecting natural resources — they must also enable mills to protect the health and safety of employees and the general public. Many chemical suppliers are introducing products that are simplifying storage and handling issues and making it easier to comply with local safety standards. For example, recently developed wet strength resins are low- and zero-VOC products, which means mill workers are exposed to fewer harmful compounds.

At the same time, these resins make it possible to produce safer, healthier products for consumers. The newest wet strength innovations are designed to meet recommendations issued by the German Federal Institute of Risk Assessment (Bundesinstitut für Risikobewertung, or BfR) and the US FDA for safe food contact with paper products or components.

Taken together, all of these innovations provide today's tissue and towel manufacturer with an array of tools to target specific phases of the papermaking process or objectives of a sustainability programme. Either way, mills should turn to their chemical suppliers as true partners who can help solve problems, improve operations, and reduce their environmental footprints.

This article was written for TWM by Richard Cho, global marketing director, Solenis.

Tissue and towel producers, especially those in high water-risk areas, that effectively plan ahead with aggressive risk mitigation programmes, will be well positioned for the future. As partners to papermakers, chemical suppliers have been equally focused on water conservation, both in their own manufacturing processes and in their expanded offerings to customers

High efficiency wet strength resin technology breakthrough

Mark Zempel, Georgia-Pacific Paper Chemicals business manager, describes the path to a wet strength resin with step-change performance claims. A TWM report.

For many years, wet strength resins have allowed paper producers to take paper where it normally could not be used – as a replacement for cloth (paper towels), a replacement for plastic (lawn bags), and even a replacement for coolers (beverage cases). Polyamide Epichlorohydrin (PAE) wet strength resins have been used in papermaking for many decades, displacing older technology, to maintain paper strength when the tissue, towel, paper, board, or specialty material is wetted.

This strength is typically measured as wet tensile or wet tear, and is often also expressed as the percent of the dry tensile or tear maintained ("wet over dry").

As a mature technology, improvements in wet strength resin performance within the industry have been a matter of fine-tuning until now. PAE wet strength resins have evolved gradually over the decades from low solids, low efficiency resins to today's 20-30% solids, highly efficient products. Research efforts have led to small tweaks in solids, stability, cost, and performance. Today's commercial resins balance these factors along with the levels of epichlorohydrin by-products remaining in the resin. These by-products (1,3-dichloropropanol (DPC) and 3-monochloro-1,2-propanediol (MCPD)) are considered as Volatile Organic Compounds (VOC) content and are limiting factors when seeking food-contact certification and are relevant to other regulations as well.

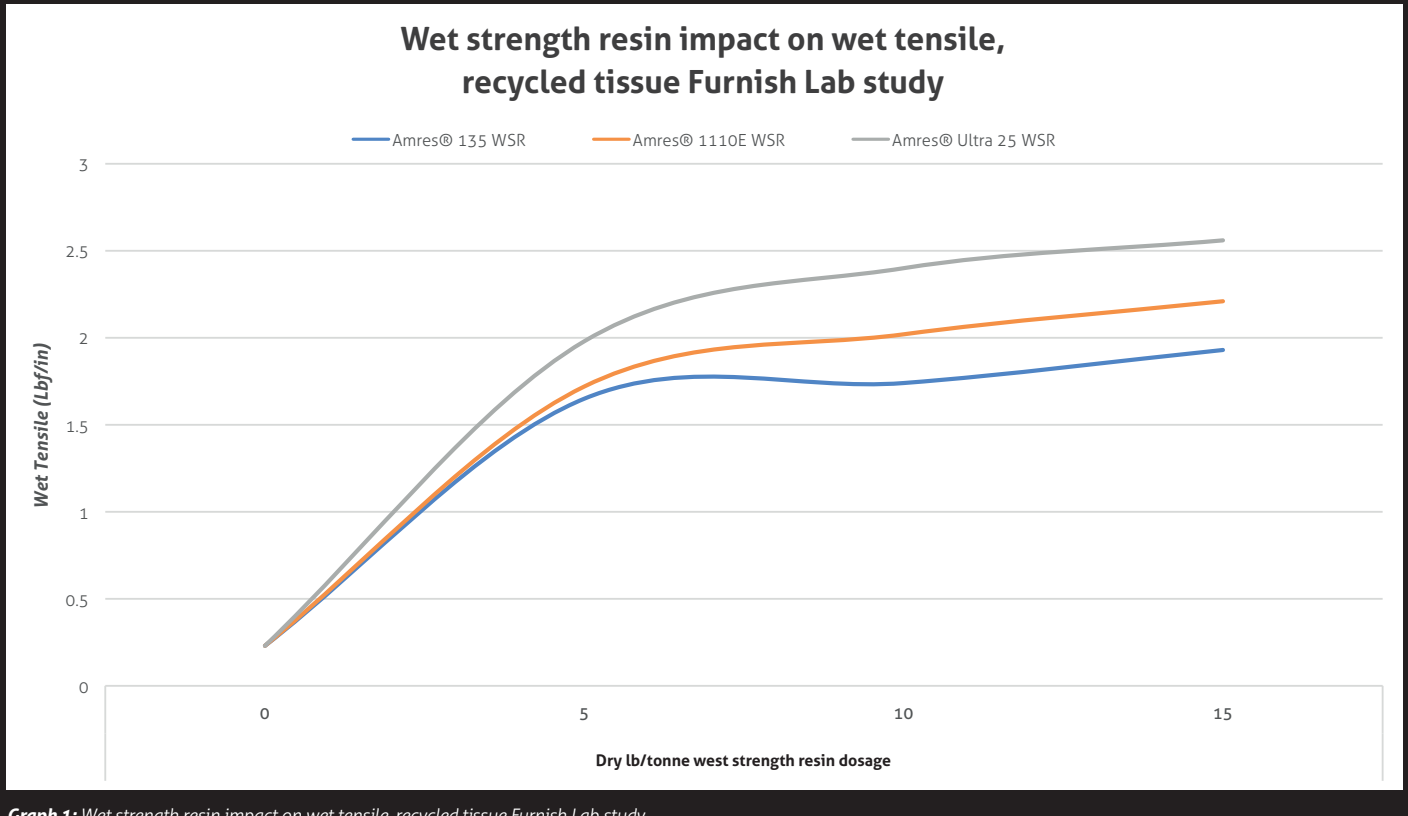
Therefore, trade-offs with cost, solids, and performance are made to achieve varying levels of these by-products in the finished wet strength resin.

Georgia-Pacific Chemicals has maintained a strong research and product development effort related to

Mark Zempel

Business manager, Georgia-Pacific Paper Chemicals

As a mature technology, improvements in wet strength resin performance within the industry have been a matter of fine-tuning until now.



Graph 1: *Wet strength resin impact on wet tensile, recycled tissue Furnish Lab study*

PAE wet strength resin technology. This has resulted in regular advancements in the solids, performance, stability, cost, and regulatory profile of PAE resins, exemplified by a large product line offered to the North American Paper Industry. Georgia-Pacific Chemicals' 25% solids Amres® 1110E Wet Strength Resin has been representative of the state-of-the-art technology for high-efficiency, higher solids, lower cost-in-use resins, as demonstrated by its performance in the lab and in the field against a wide variety of alternative products, and in a variety of grades and conditions.

This R&D effort recently resulted in a step-change technology based on a number of innovations that go beyond the gradual advancements in wet strength resin technology previously seen in the industry. These innovations have been combined into a new type of PAE wet strength resin, commercially identified as Amres® Ultra 25 wet strength resin. This technology benefits from the use of novel raw materials and unique manufacturing processes, which have resulted in a major improvement in performance and efficiency compared to even the best alternative wet strength resin.

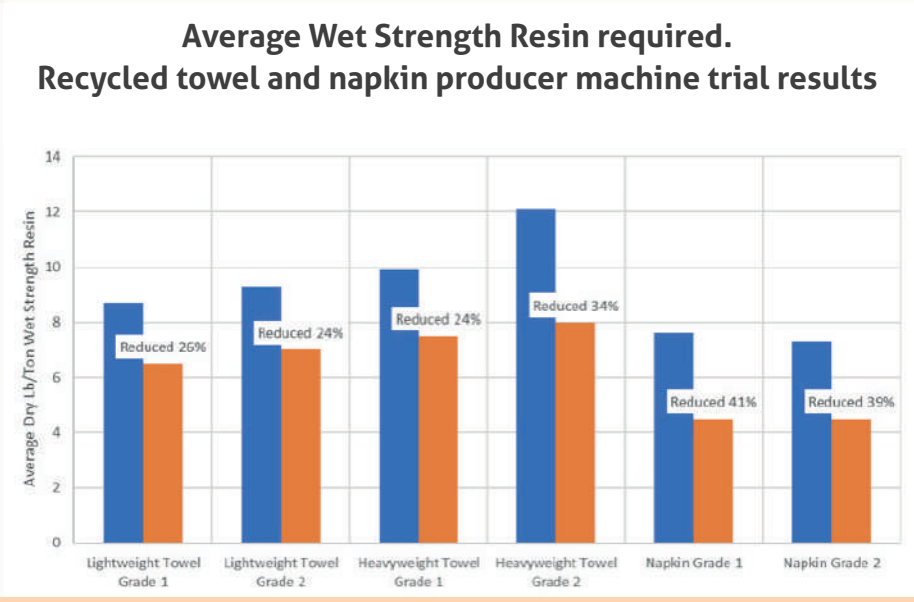
An additional feature of the technology is a significantly reduced epichlorohydrin by-product content compared to our standard resins.

This new technology has been granted patent protection. Initial lab results indicated a substantial decrease (approximately 20% dry-on-dry) in the amount of resin needed to achieve a given wet strength test level, and indicated a higher maximum achievable wet test level than with other resins.

Both observations implied potential value in the market. Lower resin dosages could reduce cost-in-use and possibly result in cleaner machine operation. Higher maximum achievable wet test could allow grade development, furnish cost optimisation or other operational changes.

A typical example of this early lab work is shown in graph 1. Note the consistent reduced requirement for dry resin at a given wet test level, as well as the higher ultimately achievable wet test level.

Broad market-based lab evaluations and eventually full-scale machine trials were then carried out. Full-scale trials were initially against reference Georgia-Pacific Chemicals resins in recycled packaging and towel grades as well as in virgin towel. Commercial trial results followed handsheet study projections and consistently showed the ability to reduce dry wet strength resin dosage by 15-35% for equivalent wet strength performance.



Graph 2: *Average dosage reduction of 31% across all grades compared to competitive products.*

In addition, successful grade development trials resulted in wet strength levels higher than previously possible.

Continued consistent success in full-scale machine evaluations and conversions led to the evaluation of Amres® Ultra 25 wet strength resin against other resins available on the market, again with success both at reducing dry dosage in the 15-35% range and pushing wet tests higher than previously possible.

In one example (see graph 2), a North American recycled towel and napkin producer was able to reduce dosage an average of 31% across all grades, while allowing higher wet tensile levels not possible with the competitive product on a new developmental grade.

PAE wet strength resin could be considered a somewhat mature technology. Introduction of a new product that can improve on efficiency by approximately 25% or increase maximum wet strength is unexpected, but has now been validated across dozens of machines, on a wide variety of grades and operating conditions.

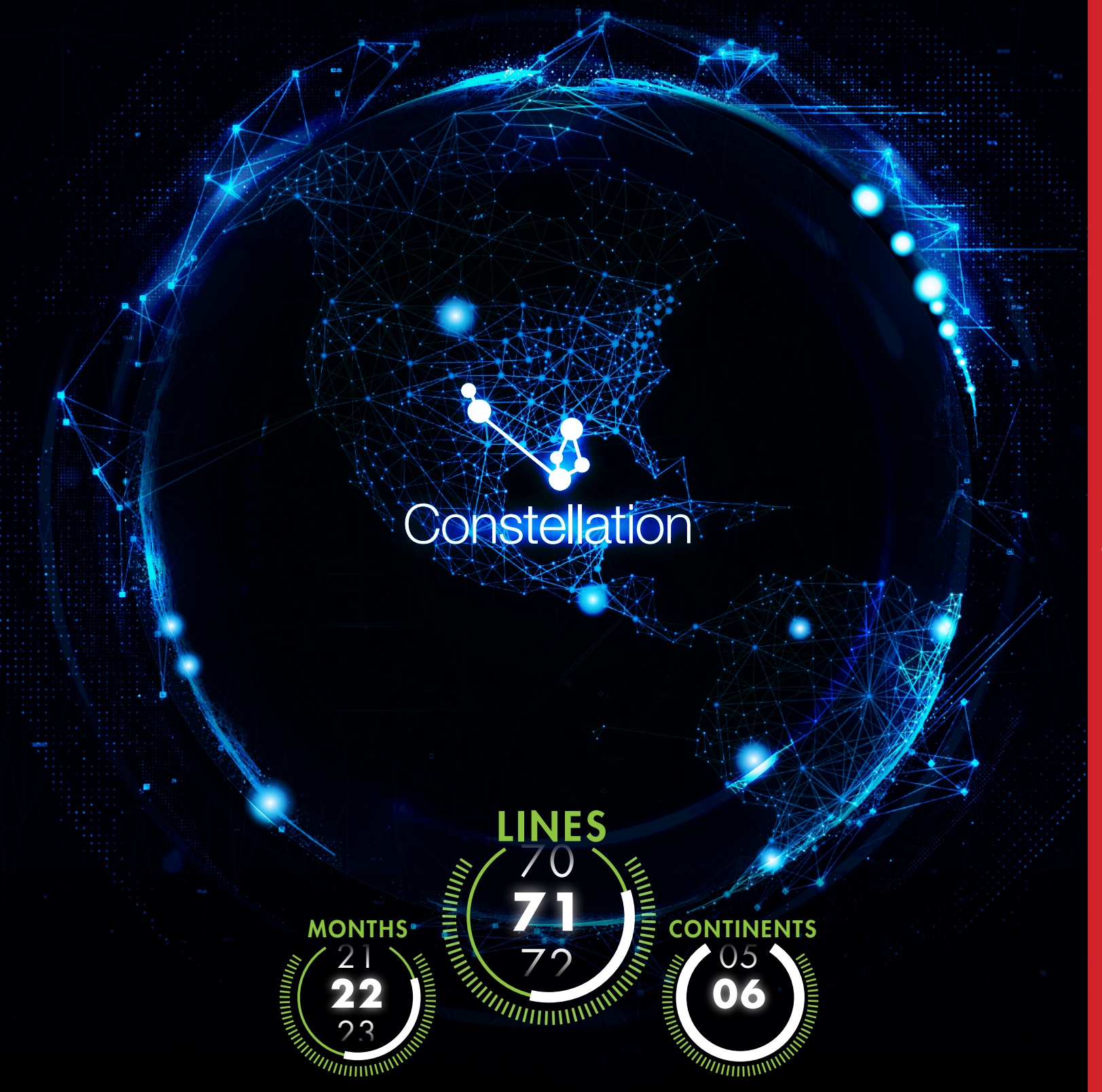
Producers that have converted to Amres® Ultra 25 wet strength resin are enjoying reduced cost-in-use related to the significant dosage reduction as well as the capability to achieve higher wet test levels and higher wet over dry levels than previously possible. In addition, users enjoy the reduction in epichlorohydrin by-products in their processes and finished products caused by both lower WSR dosage and the reduced by-products in the neat resin.

Georgia-Pacific Chemicals R&D Centre continues to further develop the Amres® Ultra 25 Wet Strength Resin technology, pushing in all directions: lower by-product content, higher efficiency and performance, higher solids and lower cost.

This article was written for TWM by Mark Zempel, Georgia-Pacific Paper Chemicals business manager.

Producers that have converted to Amres® Ultra 25 are enjoying reduced costs related to dosage reduction as well as the capability to achieve higher wet test levels and higher wet over dry levels than previously possible.

FABIO PERINI
KÖRBER SOLUTIONS



THE CONSTELLATION EFFECT

VISIBLY MORE

www.fabioperini.com

KÖRBER

Meeting the WSR challenge head on

Wet strength resins are the most expensive chemical application in tissue production. Hence the urgent need for economically effective solutions to reduce consumption. Kemira's Vladimir Grigoriev and Eric Padovani discuss. A TWM report.

Wet strength in tissue and towel products is traditionally achieved by using relatively high dosages of a wet strength resin (WSR). This puts substantial pressure on the tissue maker's profitability both due to high chemical cost and due to negative effects from WSR on machine runnability such as foaming, felt deposits and reduced dewatering.

In recent years, tissue makers have also been under pressure to reduce the AOX levels in their effluent, to which WSR can be a significant contributor. Thus, there is an acute need for economically effective solutions for reducing the WSR consumption. Kemira has developed innovative chemical solutions to provide economic and environmental advantages in the production of wet-strengthened paper grades. Among them are high efficiency FennoStrength resins that generate target wet tensile at a 10-25% lower dosage compared to the market resins.

Furthermore, WSR can be complemented by synthetic functional promoters, e.g. anionic FennoBond or cationic FennoBond, to improve WSR efficiency even further. In this paper, we present on these concepts and demonstrate their benefits using industrial case studies.

Introduction

WSR are critical for achieving desired quality targets for most tissue grades, such as towel, industrial wipes, facial tissue, hankies and napkins. The predominant WSR in the market is based on the polyamidoamine-epichlorohydrin (PAE) chemistry. There are almost no practical alternatives to PAE resins, especially when it comes to permanent wet strength that can develop under pH-neutral or alkaline conditions [Ref 1].

Vladimir Grigoriev

Applications & marketing, pulp & paper EMEA, Germany, Kemira

For some grades, where temporary wet strength is acceptable, glyoxalated-polyacrylamide (GPAM) chemistry can be a viable solution [Ref.2]. Otherwise, PAE resins still rule the wet strength world.

Wet strength resins (WSR) are critical for achieving desired quality targets for most tissue grades, such as towel, industrial wipes, facial tissue, hankies and napkins. The predominant WSR in the market is based on the polyamidoamine-epichlorohydrin (PAE) chemistry. There are almost no practical alternatives to PAE resins

Major factors affecting profitability of tissue production

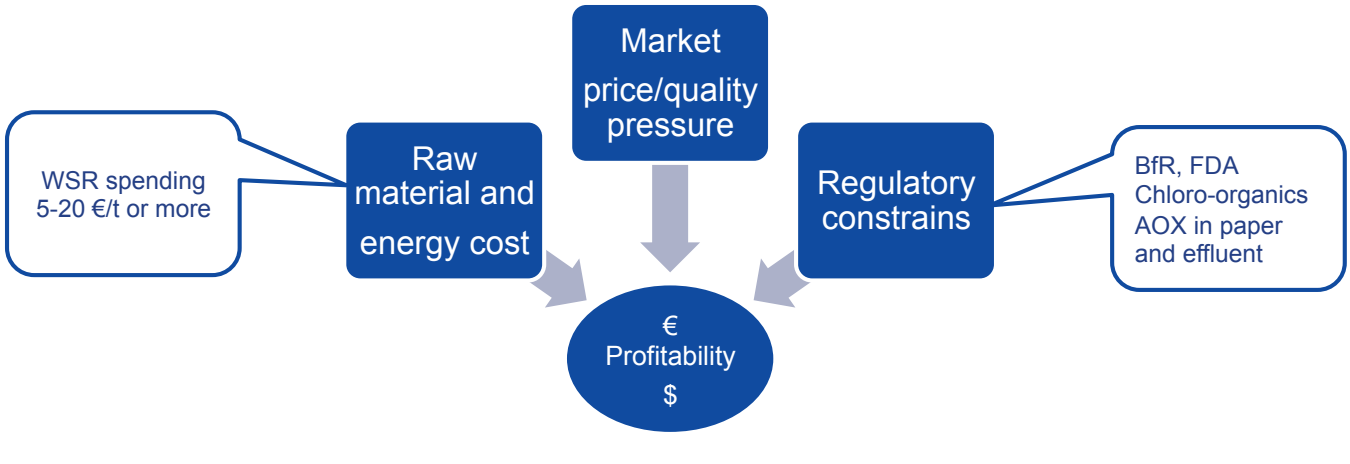


Figure 1: *High consumption of wet strength (WSR) impact profitability.*

Results of industrial trials with Kemira's FennoStrength high-efficiency wet strength resins

Mill	Grade	Fibres	Δ WSR dosage vs. incumbent	Other benefits
A	Kitchen towel	Virgin	-25%	AOX on target
B	Kitchen towel	Virgin	-17%	Less AOX in effluent, defoamer eliminated
C	AFH towel and napkin	Virgin	-15%	
D	AFH towel	DIP	-7%	
E	Industrial wipes	DIP	-10%	Less felt deposits

Benefits:
- Chemical savings
- Lower AOX in paper and effluent
- More balanced charge
- Lower risk of foam and deposits

Figure 2: *Summary of recent trials.*

In the current, highly competitive tissue market, quality and price must be balanced and profitability is always of great importance. In order to achieve high levels of wet strength, especially needed for towels, high WSR dosages are required, often reaching 30 kg/t (as received) or even more.

The cost is generally 5-20 €/t or more thus making WSR the most expensive chemical application in tissue production. Consequently, the economics of wet- strengthened grades largely depend on the resin efficiency.

In the past decade, the cost pressure in tissue production also comes from stricter regulations of chloro-organic materials, which are suspected carcinogens. The three commonly regulated materials found in PAE resins are 3-chloro-1,3-propandiol (CPD), 1,3-dichloro-2-propanol (DCP) and absorbable organic chlorine (AOX).

The regulator's concerns arise from migration of chloro-organic materials from the wet-strengthened paper to food or their discharge with waste water, potentially harming people and the environment.

Improving PAE chemistry

However, since the mid-1980s PAE chemistry has undergone a huge transformation with regard to much lower residual levels of chloro-organics. These developments are well reviewed [Ref 3]. Nowadays, very clean PAE resins are available, which are produced using highly sophisticated manufacturing processes.

The existing resins in the market have different levels of CPD, DCP and AOX and are classified as generation (G) 1, 2, 2.5, 3 and 4. The higher the G-number, the cleaner the resin. In the EU countries, the G1 resins are not used anymore since they have to be labelled as toxic and carcinogenic.

The predominant resins marketed in the EU for tissue and towel are G2 and G2.5; whereas, the G3 and G4 resins are primarily used in products designed for direct food contact, e.g. coffee filters or sausage casings. The cleaner resins

The regulator's concerns arise from migration of chloro-organic materials from the wet-strengthened paper to food or their discharge with waste water, potentially harming people and the environment.

Comparison of Kemira's wet strength resins (blue) of various generation to standard market resins (orange) with regard to the AOX level in the resin (as 20% solids) and on-machine efficiency. The bubble size represents the cost in use

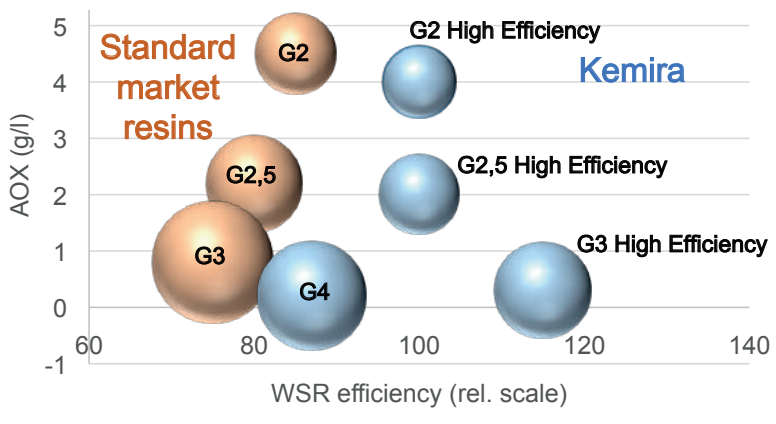


Figure 3: *AOX and Efficiency*

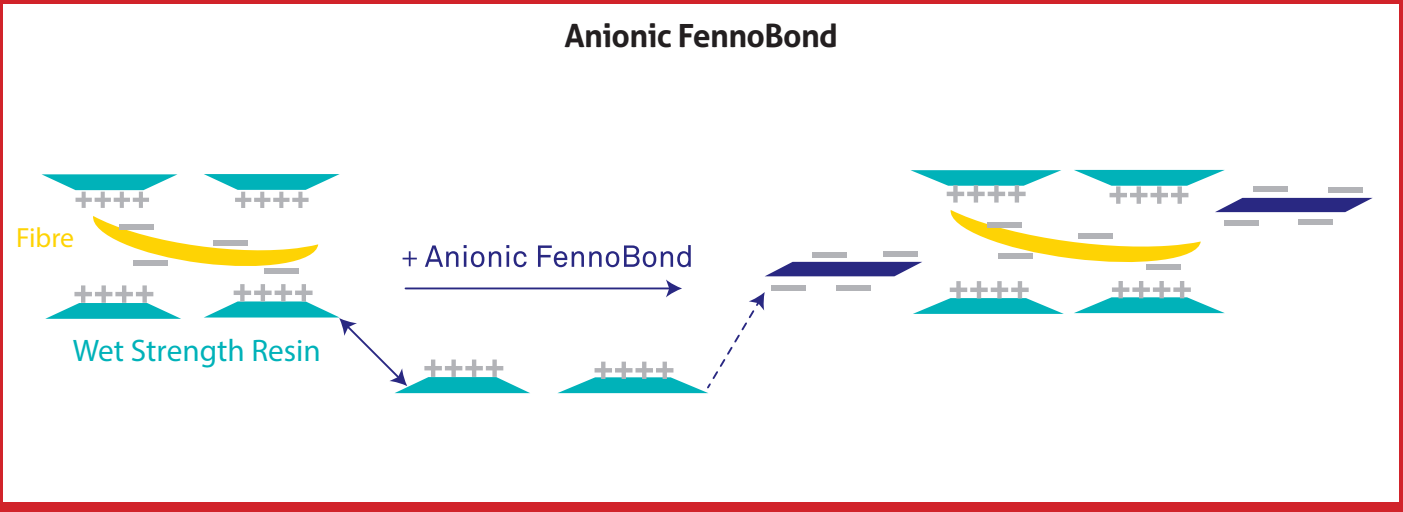


Figure 4: *Anionic FennoBond.*

are highly technical materials and tend to cost more. Therefore, the main drivers for selecting an optimal WSR are regulatory targets and the cost that have to be balanced out.

Use less WSR and achieve more benefits

The regulatory pressure on the bottom line continues to increase. The most recent restriction will be imposed by the EU Directive 2010/75/EU that comes into effect in 2018 and will reduce the AOX limit in effluent in the wet-strength paper production from 150 to 50 g/t of paper produced [Ref 4]. Furthermore, not only the governmental bodies police chloro-organics (e.g. FDA, BfR, EU Directives), but the industry self-regulates through eco-labelling (EU Flower, Nordic Swan) or requirements imposed by retailers. Many producers in the EU and elsewhere are looking for new solutions to stay compliant with more stringent requirements without significantly increasing the cost of their operation.

In response to such changing pressures, Kemira has developed a number of cost-saving and sustainable technologies for wet-strength tissue production. These include high efficiency and low AOX resins as well as complimentary functional promoters that further improve the efficiency of WSR. Higher efficiency helps not only use less resin and reduce the operating cost, but also reduce the level of AOX and other chloro-organics in tissue sheet and effluent. This paper reviews Kemira's advanced solutions, which allow tissue makers to get more benefits by using less WSR.

High-performance wet strength resins

The obvious solution to reducing the cost of wet-strengthened tissue is to use less WSR, without jeopardising the sheet quality targets, for which Kemira offers high-performance Kemira FennoStrength® resins. Quite often, we see opportunities to reduce the resin dosage by around 10-15% and sometimes even by up to 25%. In Figure 2, the most recent industrial cases are summarised. Lower dosages allow for chemical savings as well as lower AOX in paper and effluent. Additional benefits can be achieved for machine runnability related to more balanced charge, such as a lower risk of deposits, felt plugging or excessive foam.

Even with G2 resins, tissue makers might be able to reach their AOX targets if they select high-efficiency G2 resins, not to mention high efficiency means a reduced WSR consumption and a lower operating cost. However, in many cases tissue producers must still resort to cleaner G2.5 resins.

A drawback of G2.5 resins is that they are generally more expensive to run. Not only is the product cost higher due to higher manufacturing costs, but their efficiency decreases in the post-cleaning process. To overcome this problem, Kemira has developed an improved manufacturing technology that allows production of a clean G2.5 resin without a loss of efficiency.

Cationic FennoBond forms strong covalent bonds with fibres, improving both dry strength and initial wet strength, but the wet strength is temporary due to hydrolysis

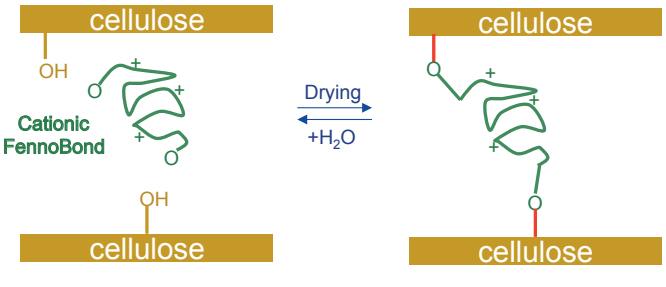


Figure 5: *Cationic FennoBond.*

High-efficiency and clean WSR with lower cost-in-use

Various generations of standard market resins are compared to high-efficiency resins produced by Kemira in Figure 3. With standard market resins, the cleaner the resin, the lower its efficiency and, therefore, the higher dosages needed to reach wet strength targets. Higher WSR consumption, combined with already a high price of cleaner resins, make

the cost-in-use increase significantly. However, the cleaner resins produced by Kemira according to the advanced manufacturing process, maintain their high efficiency. Therefore, the cost-in-use for G2.5 and G3 resins is significantly lower compared to equivalent market resins.

Benefits of high-efficiency wet strength resins

- Chemical savings
- Lower AOX in paper and effluent
- More balanced charge
- Lower risk of foam and deposits
- Improved dewatering and machine runnability

Functional promoters reduce consumption of WSR

Further reduction in WSR consumption can be achieved by using complimentary additives, referred to as functional promoters or WSR promoters. Kemira offers two types, anionic and cationic promoters, sold under the Kemira FennoBond® trade name.

Anionic functional promoters

Anionic promoters provide the most benefits when high levels of WSR are used. WSR's are high charge polymers and tend to overcationise fibres, resulting in decreased resin retention and its low efficiency. Besides over-usage, unretained WSR can cycle up in the short loop, causing runnability issues such as excessive foaming, felt plugging and decreased dewatering. With the help of anionic FennoBond, fibre charge can be rebalanced, allowing for a more effective retention of WSR, thus improving the economics and keeping machine runnability under control. Lower dosage of WSR also means lower AOX levels in effluent.

Cationic functional promoters

Another innovative solution for reducing WSR consumption is Kemira's cationic functional promoter or cationic FennoBond. The chemistry of cationic FennoBond works through a different mechanism compared to anionic FennoBond. Cationic FennoBond polymer reacts with fibres and forms strong covalent bonds, contributing to both dry strength and wet strength development. Yet these bonds are hydrolysed in water, making the wet strength temporary, as shown in Figure 5.

Further reduction in WSR consumption can be achieved by using complimentary additives, referred to as functional promoters or WSR promoters. Kemira offers two types, anionic and cationic promoters, sold under the Kemira FennoBond® trade name.

For many tissue and towel grades, permanency of wet strength is not required. Tissue products such as AfH towels, napkins or facial tissues are normally not used for longer than 10-20 sec, which is enough time for cationic FennoBond to provide the required wet strength. Tissue makers can use extra wet strength from cationic FennoBond to reduce the WSR dosage. With lower WSR consumption, lower AOX levels can be achieved as well as improved machine runnability.

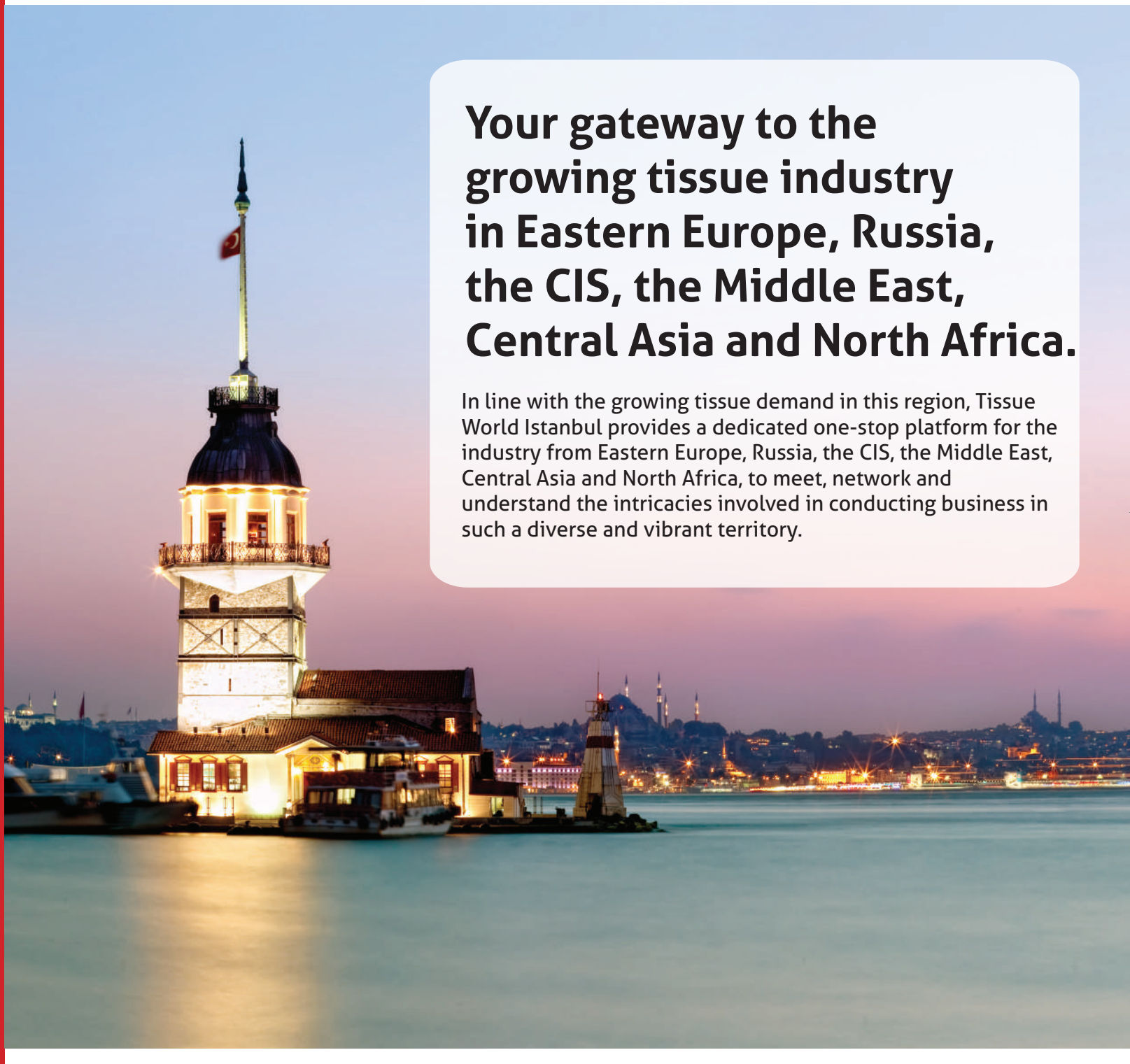
In addition, cationic FennoBond can

"Many producers are looking for new solutions to stay compliant with more stringent requirements without significantly increasing costs. The cleaner resins are highly technical materials and tend to cost more. Therefore, the main drivers for selecting an optimal WSR are regulatory targets and the cost that have to be balanced out."

Eric Padovani

TISSUE WORLD Istanbul

4 - 6 September 2018
Istanbul Congress Center (ICC)
Istanbul, Turkey
www.tissueworld.com/istanbul



Your gateway to the growing tissue industry in Eastern Europe, Russia, the CIS, the Middle East, Central Asia and North Africa.

In line with the growing tissue demand in this region, Tissue World Istanbul provides a dedicated one-stop platform for the industry from Eastern Europe, Russia, the CIS, the Middle East, Central Asia and North Africa, to meet, network and understand the intricacies involved in conducting business in such a diverse and vibrant territory.

Portfolio
TISSUE WORLD

Organised by
UBM

Official Magazine
TWM
TISSUE WORLD MAGAZINE

www.tissueworld.com

CASE STUDY 1

More effective FennoStrength provides chemical savings and AOX on target

Machine	• 18 g/m² kitchen towel, 30/70 SW/HW • 1-layer Crescent, 200 t/d, 1650 m/min • WSR @ 3,2 kg/t dry added to outlet of machine chest
Needs	• Improved WSR efficiency and reduced spending • No increase of AOX in paper
Solution and benefits	FennoStrength instead of incumbent WSR • WSR reduced to 2,4 kg/t dry (-25%) • Refining energy from 60 to 43 kW/t (-28%) • AOX in paper on target • Net savings: >10%

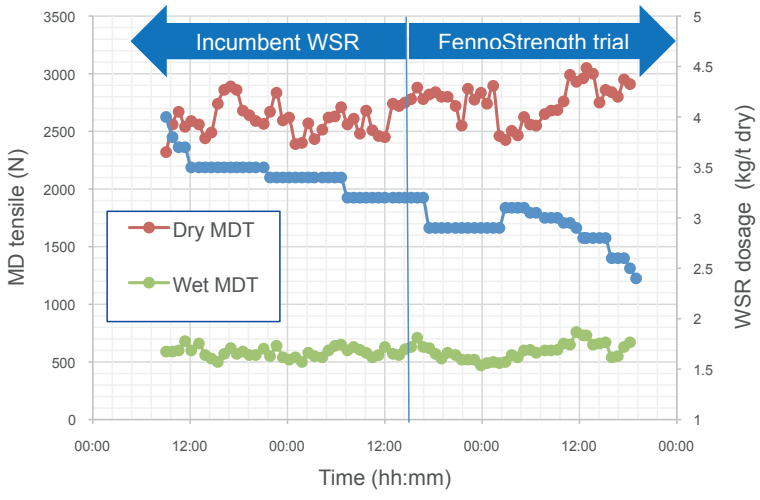


Figure 6: *Machine trial summary for replacing incumbent resin with Kemira's high-efficiency G2.5 resin.*

boost dry strength, giving more flexibility to tissue makers in optimising their process parameters, especially refining. Less refining could provide opportunities for higher bulk, improved softness, less dust and enhanced dewatering. Thus, cationic FennoBond provides benefits of unique sheet characteristics, lower AOX and overall cost-savings.

Case Study 1: Chemical savings and AOX on target

A towel producer has a tight control for the AOX level in paper, requiring a use of a standard G2.5 resin, which contributed to production cost. Reducing chemical cost was important for this machine. Kemira offered a new high-efficiency G2.5 FennoStrength. Figure 6 shows a trial summary. The machine trial showed 25% less resin was needed to maintain sheet quality and AOX targets. This resulted in more than 10% net savings.

Case Study 2: Anionic FennoBond improves safety and provides economic benefits

A towel manufacturer was using carboxymethylcellulose (CMC) to control fibre charge and provide dry tensile. CMC is an old technology for promoting WSR, which is effective yet with some drawbacks. The main issue is handling of CMC powder, which is associated with safety hazards such as dust and slippery floor around the make-down area. CMC was replaced with a synthetic anionic FennoBond that is supplied in a liquid form and only requires a pump to feed the chemical. Figure 7 summarises the results from an industrial trial. Anionic FennoBond was not only safer to use, but it resulted in an improved WSR efficiency. The wet tensile and dry tensile remained on target at 22% less WSR, generating 10% net savings.

Case Study 3: Partial replacement of WSR with cationic FennoBond generates cost savings

A manufacturer of napkins was looking for increased strength and refining energy savings. Cationic FennoBond was added after WSR, resulting in an almost immediate boost in both wet and dry tensile strength. Increased strength provided flexibility for optimising other process parameters. Refining was significantly reduced, generating energy savings. In addition, with less refining, dewatering improved and productivity increased. An increase in wet tensile strength gave an opportunity for decreasing WSR consumption by 13%. The net savings were estimated at over 90 k€/a. Even though the WSR efficiency or AOX were not the targets in this case, lower WSR dosage contributed to the overall savings and should also help lower AOX in effluent and paper.

Conclusions

WSR is a key contributor to the cost of a tissue machine operation; Kemira has developed solutions to allow tissue makers to remain compliant with regulations while keeping the chemical cost under control. They include:

- High efficiency and low AOX FennoStrength resins;
- Functional promoters;
  - Anionic FennoBond for charge balance and improved WSR retention;
  - Cationic FennoBond for partial substitution of WSR.

Additional benefits from increasing WSR efficiency can be improved machine runnability and increased productivity.

This article was written for TWM by Kemira's Vladimir Grigoriev, applications and marketing, pulp and paper EMEA, Germany, and Eric Padovani, applications and marketing, pulp and paper EMEA, France.

WSR is a key contributor to the cost of a tissue machine operation; Kemira has developed solutions to allow tissue makers to remain compliant with regulations while keeping the chemical cost under control.

With over 45 years of tissue making experience, advanced technology and consistent quality; we provide a strong portfolio of finished and semi-finished products. Outstanding service, flexibility and a solution oriented approach are the key drivers of our long partnerships with our customers spanning five continents. **Move your business forward with us!**

TISSUE WORLD Milan

Come visit us!
10 - 12 April 2017
Fieramilanocity Hall 3
Visit Us at Stand E670!

İPEK KAĞIT

Eczacıbaşı

CASE STUDY 2

CMC replacement improves product handling safety and provides economic benefits

Machine
- 21 g/m² kitchen towel, SW/HW
- 2-layer Crescent, 200 t/d, 1650 m/min
- WSR added to outlet of MC
- CMC before level box

Needs
- Cost effective replacement of CMC related to powder handling and associated hazards (dust, slippery floor)

Solution and benefits

A-FennoBond instead of CMC
- WSR dosage from 23 to 18 kg/t (-22%)
- Dry and wet tensile on target
- Charge balance and retention improved (WW solids from 1,0 to 0,9 g/l)
- Net savings ~10%

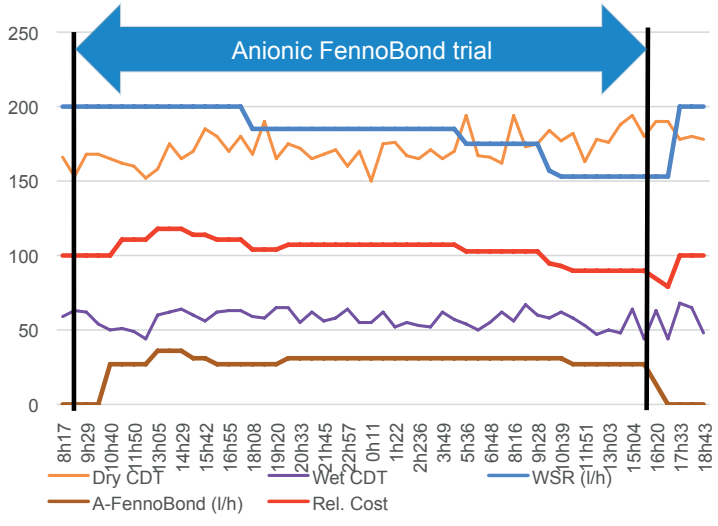


Figure 7: *Machine trial summary for using Anionic FennoBond functional promoter, demonstrating a safer alternative to CMC and improved WSR efficiency*

References

1. Wet Strength Resins and Their Application, L.L. Chan, Ed.; TAPPI Press, Atlanta 1994.

2. C. Campbell, H. Goldsberry, K. Wittich and F. Higa; Grade specific optimisation: Permanent (PAE) versus temporary (GPAM) wet strength utilisation; Tissue World magazine, September/October 2015.

3. M. Gorzynski, B. Nordqvist and J. Emanuelsson; Development of Environmentally Friendly Neutral Wet-Strength Agents, 1996 Papermakers Conference Proceedings, TAPPI.

4. Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions, published in Official Journal of the European Union, 30.9.2014, L284/116.

CASE STUDY 3

Partial replacement of WSR results in chemical and energy savings + productivity gain

Machine
- 17 g/m² napkin, SW/HW
- 1-layer Crescent, 70 t/d, 1400 m/min
- WSR @ 5 kg/t added to outlet of MC

Needs
- Increased strength
- Reduced refining energy

Solution and benefits

C-FennoBond @ 4 kg/t after WSR
- Increased dry (+24-25%) and wet tensile (+16-19%)
- Refining from 55 to 37 kWh/t (-24%)
- WSR consumption down (-13%)
- Production increased (+2-3%)
- Net savings >90 k€/a

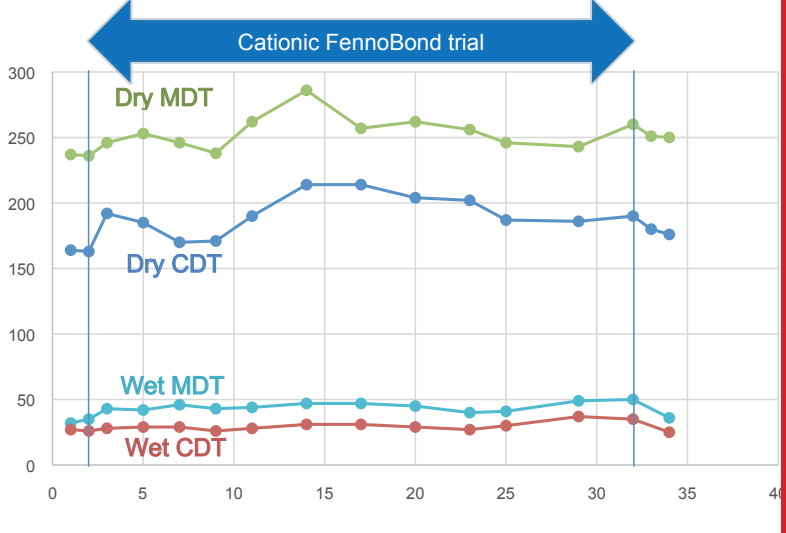


Figure 8: *Machine trial summary for using Cationic FennoBond functional promoter, providing flexibility for less refining, reduced WSR consumption and overall savings*

TWM Interview: Manuel Dizon, CEO - International, Global Tissue Business Unit, Asia Pulp & Paper

Manuel Dizon joined Asia Pulp & Paper as CEO – International, Global Tissue Business Unit in January 2017. He has more than 20 years of general management, sales, and marketing experience with companies including Coca-Cola, Kimberly-Clark and Procter & Gamble. A TWM report.

TWM/1 What is your vision for APP's AfH and retail tissue products globally?

Dizon: "Our goal at APP is to continue to bring quality tissue to the marketplace at an affordable price, all while growing our sustainable solutions offerings.

"On a global level, we're aiming to mirror the success we have seen in Indonesia and China in other markets – including Australia, India and North America – while continuing to expand our Asian market share for both in-home and retail tissue products."

TWM/2 What is your strategy to achieve that?

Dizon: "APP has a distinct advantage in its size and structure. We are focused on creating a single, integrated approach to our business and production process, where AfH and retail are one global business instead of two separate lines.

"Because of this, we're able to provide a value few others in our industry can: top-tier quality and sustainable sourcing options at a very competitive price.

"We have the opportunity to look at the industry with a global mindset and align production to match demand accordingly, whether it's the growing AfH market in Australia, or the overall upward trajectory in India and the Middle East."

TWM/3 What new tissue capacity will APP have starting up in the coming years and are you targeting a specific geographical region for these start-ups?

Dizon: "We are seeing increased customer demand for tissue products, especially across Asian markets. This presents an opportunity to align our operations, promoting integration instead of splitting tissue into multiple mills.

"We're looking to add tissue capacity in the North Asia, ASEAN and Pacific regions.

"The new capacity will support our strategic growth plans for our International business while at the same time providing investment and jobs in the countries where we operate."

"We're able to provide a value few others in our industry can: top-tier quality and sustainable sourcing options at a very competitive price."

Manuel Dizon

TWM/4 How is the economy impacting your local tissue market and what trends and opportunities are there for APP?

Dizon: "Sustainability is one of the biggest trends and opportunities we see. We promote a more complex approach to sustainability than simply recycling – one of our key value propositions is our sustainable forestry programme.

"By using rapidly renewable fibre from our sustainable plantations we are able to provide customers with alternative sustainable choices to simply recycled products.

"The growth in the overall market, of course, is a great opportunity – but the range of sustainable options we are able to provide is even greater."

"The growth in the overall market, of course, is a great opportunity – but the range of sustainable options we are able to provide is even greater."

Manuel Dizon

TWM/5 What product markets are you currently serving and in which products do you see growth opportunities?

Dizon: "Tissue consumption is directly correlated with GDP per capita. As economies continue to expand, we see an increase in per capita consumption of tissue, both AfH and retail.

"This is a trend that we need to capitalise on. At the same time, we want to continue to provide consumers with a better experience.

"This is where our development and launch of innovative, value-added tissue products come into play, including bathroom, facial and kitchen tissue. We see this as a significant area of growth for the company."

TWM/6 What innovations is APP working on and launching?

Dizon: "APP has capabilities in every step of the process – from pulp, to production, to conversion. Our fully integrated approach gives us the opportunity to spend less resources on managing vendors, and more on developing renewable, sustainable solutions and innovative products.

"Our sustainability initiatives are a differentiator and at the core of everything we do. APP's zero deforestation commitment ensures that the fibre used within its tissue products come from sustainably managed plantations. Absolutely no natural forests materials are used in the production of any products.

"The two primary tree species used by APP are Eucalyptus and Acacia. On average, these rapidly growing trees can be grown and harvested in a five-year cycle.

"This allows APP to maintain and protect forest land, while growing its own steady supply of fibre, eliminating the need to use natural forest materials."

TWM/7 What trends are you seeing within the industry overall?

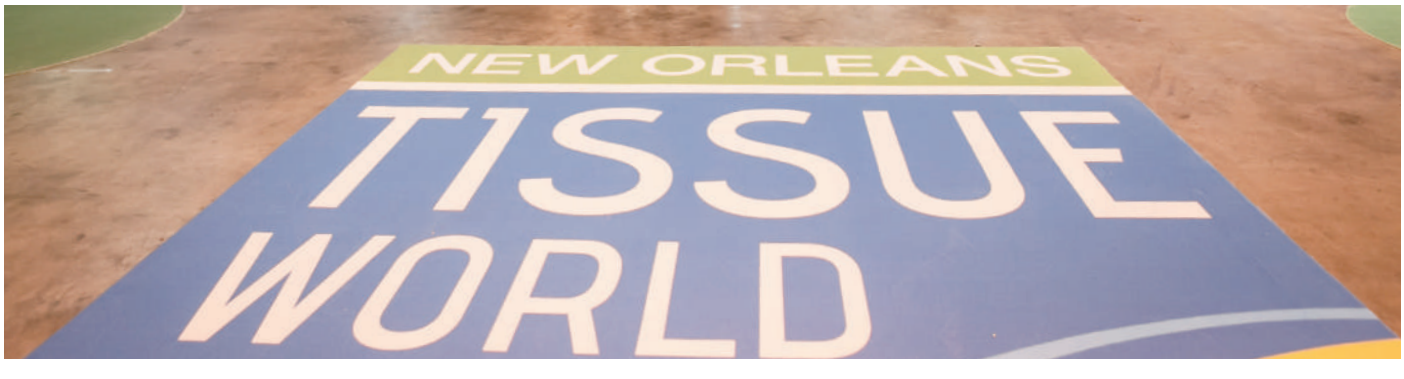
Dizon: "One of the growing trends we see in the tissue market is an increasing demand for sustainable products and this creates unique challenges in the tissue sector.

"Consumers historically have defaulted to a high recycled content as the baseline of sustainability. However, in tissue that is not always possible.

"Our products still require a certain percentage of virgin fibre for whiteness, softness and strength."

Events Calendar

Event	Date	Location	Website
ISSA/INTERCLEAN North America	September 11 – 14, 2017	Las Vegas, USA	www.issainterclean.com/northamerica/
Labelexpo Europe 2017	September 25 – 28, 2017	Brussels, Belgium	www.labelexpo-europe.com
Tissue 2017 Conference and Expo	October 3 – 6, 2017	Miami, Florida, USA	http://tissue2017.com/
MIAC	October 11-13, 2017	Lucca, Italy	www.miac.info/
ISSA/INTERCLEAN ISTANBUL	October 18 – 20, 2017	Istanbul, Turkey	www.issainterclean.com
Paper Middle East / Tissue Middle East	October 24 – 26, 2017	Cairo, Egypt	http://papermideast.com/
Tissue Middle East	October 24 – 26, 2017	Cairo, Egypt	http://www.tissueme.com/
Tissueex 2017	November 1 – 4, 2017	New Delhi, Delhi, India	http://www.tissueex.com/en-GB
London Pulp Week	November 6 – 10, 2017	London, UK	http://www.pulpweek.co.uk/
PAP-FOR	November 13 – 16, 2017	St. Petersburg, Russia	www.papfor.com/en/
Labelexpo Asia 2017	December 5 – 8, 2017	Shanghai, China	www.labelexpo-asia.com/welcome-labelexpo-asia-2017
Tissue World Miami	March 21 – 23, 2018	Florida, USA	www.tissueworld.com/miami
ISSA/INTERCLEAN Amsterdam	May 15 – 18, 2018	Amsterdam, Netherlands	www.issainterclean.com/en/amsterdam
CIDPEX 2018	April 18 – 20, 2018	Nanjing, China	http://www.cnhpia.org/en/shyz/
Asian Paper/Tissue World Bangkok 2018	June 6 – 8, 2018	Bangkok, Thailand	www.asianpapershow.com/www.tissueworld.com
It's Tissue 2018	June 25 – 29, 2018	Lucca, Italy	http://www.itstissue.com/
Tissue World Istanbul	September 4 – 6, 2018	Istanbul, Turkey	www.tissueworld.com/istanbul
Labelexpo Americas 2018	September 25 – 27, 2018	Chicago, USA	www.labelexpo-americas.com/welcome-labelexpo-america
ISSA/INTERCLEAN North America	Oct 29 – Nov 1, 2018	Dallas, TX, USA	http://www.issainterclean.com/
PAP-FOR Business Forum 2018	November 14 – 15, 2018	St. Petersburg, Russia	http://www.papfor.com/en/
Tissue World Milan	March 25 – 27, 2019	Milan, Italy	http://www.tissueworld.com/milan/



Advertiser's Index

Subscription Form

Tissue World magazine is free to qualified members of the tissue industry. Please complete and return the form below to express your interest to subscribe for the magazine. If you're not a tissue industry professional you may purchase an annual subscription for USD 400 for 6 issues. Please contact the Tissue World team at info@tissueworld.com to enquire about subscription.

☐ Mr ☐ Ms **All fields are important and must be completed*

First Name* Last Name*

Job Title*

Company*

Address*

Postal Code*

Address 2

City* State* Country*

Telephone* Fax*

Email*

Company Website*

What is your company's primary field of business (tick all that apply):

A. INTEGRATED TISSUE PRODUCTS MAKER

Primary business making paper and producing:

☐ Consumer (At Home) Finished products
☐ Away-from-Home (AFH) Finished products
☐ Other Tissue Grades, please specify: .....

B. JUMBO ROLL SUPPLIER

☐ Jumbo Roll Maker, for sale to converters

C. TISSUE CONVERTER

Primary business is converting jumbos and producing:

☐ Consumer Finished products
☐ Away from Home (AFH) Finished products
☐ Other Tissue Grades, please specify: .....

D. RETAILING AND DISTRIBUTION

☐ Retailer
☐ Broker
☐ Distributor

E. SUPPLIER TO THE TISSUE INDUSTRY Please check all that apply:

☐ Paper making machinery
☐ Fabrics, felts, clothing
☐ Drying technologies
☐ Process automation and control
☐ Water treatment, environmental and effluent control
☐ Dust control and air treatment systems
☐ Doctors and creping blades

☐ Deinking
☐ Stock preparation, fiber processing and pulping equipment
☐ Fibers: Market pulp and recycled fiber
☐ Chemicals and chemical technologies

☐ Converting machinery and supplies
☐ Printing machinery and supplies
☐ Inks, glues and dyes
☐ Embossing rolls

☐ Knives and blades
☐ Folders/interfolders
☐ Cores and coreboard
☐ Wrapping/Packaging equipment and supplies
☐ Transport and logistics

☐ Energy and Power

☐ Testing machines
☐ Engineering
☐ Consulting services. Please specify field: .....
☐ Dispensers and dispenser systems
☐ Insurance and financial services
☐ Used machinery
☐ Media, press, information services

☐ Other (please specify): .....

Signature **Date**

Send to UBM Exhibition Singapore Pte Ltd, 10 Hoe Chiang Road, #20-05 Keppel Towers, Singapore 089315

Fax: +65 6221 2282 or subscribe online www.tissueworldmagazine.com/subscribe.php

Publisher reserves the right to determine qualification for free subscription

TWM
TISSUE WORLD MAGAZINE

ANDRITZ

When a vision comes true:
The world's most modern tissue pilot plant

ANDRITZ is proud to present the world's most modern Tissue Innovation and Application Center: *Prime*LineTIAC. The center at the ANDRITZ headquarter in Graz, Austria, features unique technology and offers opportunities to test and develop the tissue solutions of tomorrow. In cooperation with our key technical partners — Albany International Corp., Danfoss Drives, Fibria, IBS Paper Performance Group, Nash, Södra, Solenis — we made the impossible possible and developed a tissue machine that is unique worldwide and that can produce conventional, textured, and structured (TAD) tissue. Contact us today: PrimeLineTIAC@andritz.com

The pilot plant is sponsored by FFG as part of R&D infrastructure promotion.

www.andritz.com

PrimeLineTIAC@andritz.com

Trebor

The **LEADER** in **Tissue** since **1972.**

The leader specializing in tissue parent rolls for over 45 years.

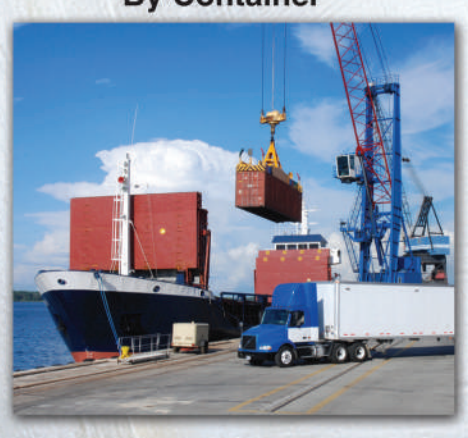
There is only one number one... *Trebor*.

The most dependable source for parent rolls of Tissue, Towel and Napkin.

Over 45 years and counting.

By Truck

By Container



By Breakbulk

TREBOR
USA
Telephone:
732.335.4255
Fax: 732.335.4244
www.trebor.com

Tissue • Toweling • Napkins
Wet/Dry Crepe • Wiper Grades

Member Customs-Trade Partnership Against Terrorism

SEE US AT *ISSA LAS VEGAS*
booth #1327