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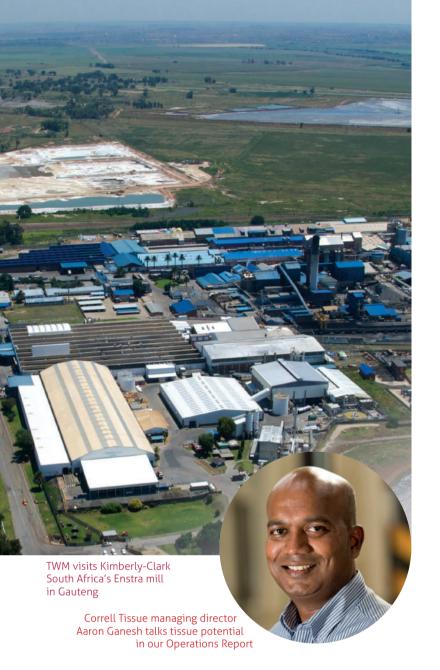
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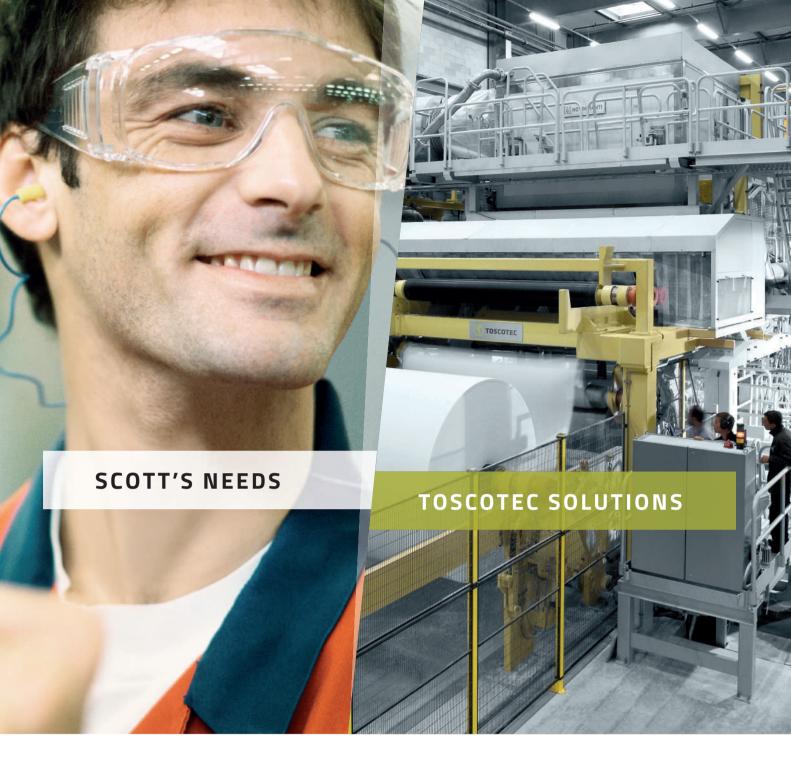


	Quick links	Page
F	Frontlssues	03
M	MarketIssues	04
W	World News	09
C	Country Report	18
0	Operations Report	25
S	Special Feature	40
O	Technical Theme	45
E	ExitIssues	50

TWV

TISSUE WORLD MAGAZINE

In this issue	Page
Frontissues Huge potential yes, but plan for the long term in sub-Saharan Africa	3
Marketissues Is the slowdown in China a threat for the South East Asian tissue market? By Pirkko Petäjä, principal, Pöyry Management Consulting	4
World News An in-depth round up of the main tissue news stories from around the world	9
Country Report - Fisher International South Africa: Locally focused and underdeveloped T&T market	18
Country Report - Euromonitor International Budget constraints hinder demand for consumer tissue	23
Operations report: Kimberly-Clark An expanding main market opportunity long term. TWM meets K-C South Africa	25
Operations report: Universal Paper & Plastics	29
Niche innovation is key for this independent player. We interview three members of the founding Sher family	
Operations report: Correll Tissue Tissue temps another major player from print and paper	32
Operations report: Sappi Sugar cane and able: The company discusses the primary fibre source which supplies its Stanger site	35
FOEX Gain insight into the latest pulp price trends that impact your business with our in-depth analysis	36
Consumerspeak Charlotte Lynn is a Canadian teacher. She talks about her preferences for high quality, well-priced tissue products	39
Special Feature: Annual Review As 2015 draws to a close, TW's Annual Review asks figures in the global tissue industry for their retrospectives on 2015 and predictions for 2016	40
Technical Theme: Packaging Preferred Packaging, EVT and OCME talk about their latest technological advances	45
Exitissues Free from its long dark history how high can resource rich Indonesia rise? Academic Phillip Lawrence explains how the country achieved such stellar growth, and asks are its targets reachable?	50
Events Calendar	51





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By Tissue World magazine editor Helen Morris

Huge potential yes, but plan for the long term in sub-Saharan Africa

he extraordinary history and traditions of the peoples of the continent of Africa have produced many proverbs ... I especially like this one: Beware time, because it has the answers.

What struck me most in this edition's Country Reports in South Africa is the optimism and ambition of tissue sector personnel set against a recognition that bridging the gap between what little growth there will be in the immediate future - and reaping the real potential growth which is waiting out there - is a long term, possibly a very long term project.

The potential is clear. With a population in excess of 1.1 billion people and growing, the African market is second only to Asia with 4.4 billion. A large population supplied by low production would usually mean positive forecasts and a rush to build mills. But Fisher International's analysis tells us that continental Africa and South Africa itself have seen low growth in recent years, tending to flat-lining today.

South African's tissue men and women are altogether more optimistic, as our reports show. Estimates of their various growth figures range up to 10%, even as they battle a struggling economy, widespread poverty, stifling exchange rates, rising energy costs, high labour costs, and the particular logistical problems associated with the geography of sub-Saharan Africa.

The reason for the imbalance of optimism is that tissue people on the front line have the skills to do something about it, uppermost among which are innovative talent, determination and passion.



China's influence on ASEAN

China faces a high probability of being the next major power to face an economic collapse, Pirkko Petäjä says in her analysis in MarketIssues.

An ambitious rebalancing of China's economic model is underway - from manufacturing for export underpinned by government investment in core industries, to boosting domestic consumption through a rapidly growing middle class with real spending power. That should be good news for tissue in China and across the huge ASEAN market? But it carries huge risks.

EDITORIAL HEADQUARTERS

UBM Exhibition Singapore Pte Ltd.

10 Hoe Chiang Road, #20-05 Keppel Towers, Singapore 089315 Tel: +65 6592 0888 • Fax: +65 6438 6090

PUBLISHER

Ivan Ferrari ivan.ferrari@ubm.com

EDITOR

Helen Morris helen.morris@ubm.com

ASSISTANT MARKETING MANAGER

Yew Lei Ching 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

ADVERTISING ENQUIRIES

Americas and Europe

Paolo Rampetta Tel/Fax: +32 2 646 1606 Skype: paolo.rampetta Mobile: +32 497 050 755 Email: paolo.rampetta@skynet.be

Asia-Pacific Sales

Ivan Ferrari Tel: +65 6592 0888 Ext. 886 Fax: +65 6438 6090 Email: ivan.ferrari@ubm.com

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Please send address corrections to **UBM Exhibition Singapore Pte Ltd.**10 Hoe Chiang Road, #20-05 Keppel Towers, Singapore 0893159
Email: info@tissueworld.com

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Is the slowdown in China a threat for the South East Asian tissue market?

he South East Asian region is among the fastest growing tissue markets worldwide, but tissue production in the region grows even faster

South East Asia consists of eleven countries that reach from eastern India to China, and is generally divided into "mainland" and "island" zones. The mainland (Burma, Thailand, Laos, Cambodia, and Vietnam) is an extension of the Asian continent. Island or maritime South East Asia includes Malaysia, Singapore, Indonesia, the Philippines, Brunei, and the new nation of East Timor (formerly part of Indonesia).

A distinctive feature of South East Asia is its cultural diversity. Of the six thousand languages spoken in the world today, an estimated thousand are found in South East Asia. Cultural impact from both China and India can be found.

Islam is the main religion, however not necessarily dominant in all the countries.

The ASEAN tissue market grows as an average 6.5 % per year

The South East Asian tissue market totals some 760,000tpy if only the ASEAN countries are included; including also Taiwan and Hong Kong the market totals over one million tonnes. Indonesia is the largest individual tissue market of the ASEAN countries at some 230,000tpy followed by Malaysia, Thailand and Vietnam. The Taiwanese market is a little larger than the Indonesian at 240,000tpy.

Tissue demand in the ASEAN countries grows as an average some 6,5 %/a, Vietnam and Indonesia accounting for the fastest growth rates. Markets in Taiwan and Hong Kong are more



mature and grow clearly at a slower rate.

The ASEAN market is among the world's fastest growing tissue markets on a par with the Chinese market.

THE ASEAN TISSUE MARKET TOTALS 760KT, TAIWAN AND HONG KONG ADD SOME 380KT Taiwan 240 kt / 285 kt Hong Kong 139 kt / 0 kt Thailand Philippines Vietnam 139 kt / 120 66 kt / 22 kt 100 kt / 137 kt Malaysia 166 kt / 191 kt Tissue mills Singapore Indonesia* 228 kt / 600 kt XX kt / YY kt: market demand / local production (in 2013)

By Pöyry Management Consulting's Pirkko Petäjä

Economic growth and other drivers in the markets

The tissue per capita consumption is still low in this emerging market area; (1-2 kg/capita in Indonesia, Vietnam, Thailand, some 5-6 kg/capita in Malaysia and some 10 kg/capita in Taiwan). This is even below what can be expected based on the GDP per capita levels. The GDP growth in many of the important South East Asian countries is strong at 6-7 %/a. The tissue demand growth follows the economic growth, but has even stronger growth due to the currently very low per capita consumption and also due to producers' actions and supply push i.e. increasing availability and variety of products.

A developed retail structure accelerates the tissue market growth and it is easier to do business in the areas where the trade is rather developed. The strong position of traditional trade, street shops and small markets in many of the South East Asian countries makes the distribution difficult for large foreign companies and favours local supply.

Quality requirements in the markets

South East Asian region is typically an emerging market where quality requirements are not necessary as demanding as in the more mature markets. Also the purchasing power can be low favouring lower quality and for instance low priced low quality recovered fibre based products.

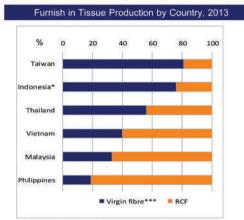
The lower quality levels are often locally produced as the prices cannot cover much transportation costs.

Hong Kong, but especially Singapore and Taiwan have high share of somewhat better quality products with value adding features. The Indonesian average quality is impacted by the high market share of APP that based on own pulp production produces virgin fibre based products and by the availability of local market pulp from APRIL; the mid-segment is relatively larger than the purely recovered fibre based lowest quality segment.

However, generally the high share of recovered fibre based products is very characteristic for the ASEAN region. This includes both mixed pulp and

FIBRE FURNISH DETERMINES THE QUALITY SEGMENTATION

The high share of recovered fibre based products is very characteristic for the ASEAN region. Taiwan and especially Indonesia are impacted by the local virgin fibre based production



Note! RCF as pulp (i.e. yield of RCP processing taken into account).

* Only the volumes sold in Indonesia have been taken into account to better reflect the situation in the market
*** Virgin fibre includes also non-wood pulp which accounts for minor share in Vietnam (<5%)

100% RCP based products. The fibre furnish is the main differentiating factor for quality segmentation.

Main players in the market are mostly local Asian companies. APP is by far the largest supplier

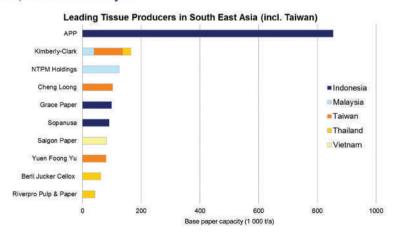
By far the largest tissue player in the region is the Indonesian based Asia Pulp and Paper (APP). APP's tissue base paper capacity in Indonesia totals 2015 some 800,000tpy and is planned to be increasing with giant steps; the latest machines are all large and planned to be (and already

are) installed in multiples. Currently APP has three tissue base paper mills in Indonesia and is planning a fourth large site. Typically most of APP mills are pulp integrated to own plantation based BHKP mills.

Kimberly-Clark is the second largest player in the region. K-C has several production bases in the main South East Asian countries but the tissue machines are typically old and small in capacity. K-C's capacity in South East Asia totals close to some 200,000tpy. All other players are more or less local, have production in one country with some limited exports to the

APP IS BY FAR THE LEADING PRODUCER IN SOUTH EAST ASIA

APP's base paper capacity in SEA is concentrated in Indonesia, integrated to its pulp mills. The second largest producer Kimberly-Clark has base paper capacity in Taiwan, Thailand and Malaysia



By Pöyry Management Consulting's Pirkko Petäjä

neighbouring countries. Largest such players include the Malaysian based NTMP, Indonesian based Grace Paper and Sopanusa and a couple of Taiwanese and Vietnamese players. Chinese imports are also important in many of the South East Asian markets.

Indonesia is the biggest net exporter, especially of jumbo reels, Hong Kong and Singapore are net importers

Indonesia, there especially APP, is a large low cost producer with excellent prerequisites to export tissue to the neighboring South East Asian countries. Indonesia exports almost 400,000tpy to the region and overseas. Exports are mainly in the form of jumbo reels, but finished products are also exported.

Hong Kong and Singapore do not have local tissue production and are therefore large net importers, also in Philippines the local production is weak in relation to the size of the local market.

Indonesia competes with the Chinese exports to the region; for instance in Hong Kong practically all the imports are from China, but Chinese exporters are to some extent present in practically all the markets.

China's impact on South East Asian tissue market

The China tissue market has been growing at 8% per annum over the last decade and China has become the second largest tissue market in the world after North America followed by Western Europe as the third. Following the brisk market growth the increase of capacity in China has been very fast. Tissue capacity doubled from 2008 to 2014 as tissue became a hot investment spot, however, overinvestment has resulted in overcapacity and has further caused continuous drop in the operating rates.

Alongside with the global economy China's GDP growth has clearly slowed down since 2008. However, it is forecast that China would keep a relative steady growth in the next few years till 2019 at over 6%/a. This is still a robust rate compared with developed countries, however, significantly lower than in the past.

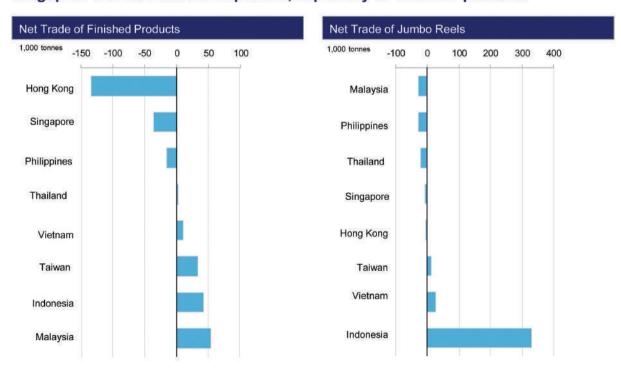
This is slowing down the tissue growth rate which is expected to total 5.6%/a by 2020. This is the long term prospect but quite recently the Chinese economy has been showing more turbulence than what has been anticipated.

Longer term capex plans are still ambitious causing closure of old uncompetitive capacity, change of geographic focus and increases pressure for exports. Consequently the tissue capacity in China is moving inland from the coast and especially the largest companies focus exports also for overseas.

Within South East Asian area the biggest importers from China are Hong Kong, Taiwan, Philippines and Singapore. In other South East Asian

IN EXPORTS INDONESIA COMPETES MAINLY WITH CHINA

Indonesia is the biggest net exporter, especially of jumbo reels. Hong Kong and Singapore are the main net importers, especially of finished products



By Pöyry Management Consulting's Pirkko Petäjä

markets the Chinese exports are only marginal. In Hong Kong where there is no local base paper production, the Chinese imports account for almost 90% of the market, being mainly finished products. In addition to Hong Kong, Taiwan and Singapore are the only markets where Chinese imports are bigger than for instance the Indonesian.

Latest developments in China's economy

The Chinese economy grew 7% during the first half of 2015. China reported that it's Purchasing Managers' Index (PMI), an indicator of manufacturing activity and a key measure of economic health, fell in August 2015 to 47%, a six-year low.

Consequently China's economy is heading for its weakest performance in 25 years, and the recent poor data indicates it might not even meet its 7% growth target for this year. While the Chinese economy is unlikely to crash anytime soon, China nonetheless faces a high probability of being the next major power to face an economic collapse.

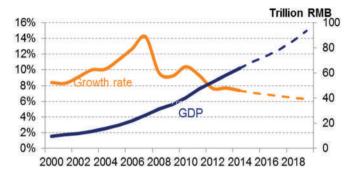
China's massive industrial output has increased wildly due to the vicious competition between local governments. In order to achieve high GDP growth, local governments have tried to attract new manufacturing facilities by offering financial subsidies such as tax holidays and rent-free use of government land. Further, local governments help firms to get cheap loans from state-owned banks.

As a result the industrial overcapacity has become a time bomb that threatens the Chinese economy because it has led companies to take on debt to repay loans. Overcapacity is a serious problem also in the tissue industry. The combination of economic slowdown, excess production in manufacturing and rising debts at the macroeconomic level may cause a massive wave of firm closures and bad loans.

Is a slower growth good or bad?

China has long been the engine of the world economy. However, in a time

ECONOMIC DEVELOPMENT IN CHINA WOULD SLOW-DOWN BUT IS STILL ATTRACTIVE



of global depression, the country's growth rate has cooled down compared with the even double-digit growth the country has enjoyed in the past. Therefore China's current economic figures have garnered a lot of attention.

How to see China's current GDP growth rate? Due to the slowdown, the Chinese government could remove some of the overheating that has been a problem in the past. Can slowing down after all be for the best?

China's economic slowdown comes at a time when the country is transitioning its economic model, diminishing its reliance on manufacturing for export and government investment in core industries while boosting domestic consumption as a new driver of the economy.

China is undergoing a massive transformation from a cheap exports nation to one that is self-reliant on its vast middle class and innovation to drive growth. With the Chinese president's words China has moved from "speed-based growth to quality-based growth."

If China manages to reengineer its new growth model, the country will be moving towards the next stage of development.

Maritime Silk Road initiative for ASEAN co-operation

As the Chinese economy is developing from the cheap exports nation towards relying on sustainable own middle class purchasing power, the Chinese economic turmoil is not

expected to impact the South East Asian tissue market very much. The trade flows are rather towards China than from China regarding the ASEAN countries, especially Indonesia. The export pressure is expected to be short term and threat of investing in overcapacity is mitigated by the slowdown and delay of the planned investments.

In addition, China has prepared mechanisms to support possible production capacity cooperation with the ASEAN Economic Community (AEC) with its "Maritime Silk Road" initiative, enabling the economies to have best possible distribution and transportation of resources to boost up the co-operation. The entire "Silk Road Economic Belt" is a far reaching initiative sometimes called the "Chinese Marshall Plan". China hopes to gain closer cultural and political ties, functioning community and economic trade routes within the altogether 65 countries in the entire Silk Road (of which the Maritime Silk Road is a part).

Slowdown in China is only a temporary threat

Slowdown of the Chinese economy causes at least temporary tissue export pressure to the South East Asian countries. However the Chinese economy developing towards boosting the domestic consumption "quality based growth" and slowdown of investments may on the contrary ease the overcapacity situation in the whole region on the long term.

Pirkko Petäjä is a principal at Pöyry Management Consulting.



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PORTUGAL

Renova in European first with NTT buy

Renova has become the first European tissue producer to invest in Valmet's Advantage NTT tissue technology.

The production line will be installed at the company's Torres Novas mill in Zibreira, Portugal, and will boost Renova's paper production capacity by 50%.

The new tissue machine will have a design speed of 1,800m/min in textured mode and 2,000m/min in plain mode.

The production line is optimised to save energy and fibre as well as add possibilities for product differentiation and increased capacity of premium quality products.

Start-up is scheduled for the end of 2016 and the value of the order was not disclosed

Pereira da Silva, Renova's chief executive, said: "We are eager to see the result from the combination of Renova's proactive innovativeness and Valmet's sustainable Advantage NTT technology.

"Its flexibility provides endless possibilities to produce special designed textured tissue products."

Valmet's scope of delivery comprises a complete tissue production line including an Advantage NTT tissue machine, with an OptiFlo headbox and a cast alloy Yankee cylinder.

It will also feature Advantage tissue technology including an AirCap hood with a WetDust system. Basic and detailed mill engineering, complete stock preparation and process ventilation are also included in the scope.

The delivery will include a Valmet DNA Automation system.

Paper Prime enters into tissue production

Paper Prime has entered into the tissue market after it invested in a Toscotecsupplied tissue line.

The new tissue line is scheduled to come on stream in the last quarter of 2016 and will be installed at the company's Vila Velha de Rodão.

Its operating speed will be 2,000mpm with a net trim width of 2,750mm and an average annual production of 38,000 tpy. As part of the Trevipapel Group which produces Joker Gold brand hygiene professional products (AfH) in Portugal, the investment is estimated at 35 million euros.

The aim is then to supply and export paper reels to Trevipapel's converter units.

The new paper mill will also be in line with a pulp mill which will add increased value to the investment providing

eucalyptus based slush pulp.

Toscotec's turn-key project for TM#1 includes stock preparation plant for dry virgin pulp, AHEAD-2.0S tissue machine with Steel Yankee Dryer TT SYD-16FT, machine auxiliaries including Milltech Gas fired Hood, as well as a steam and condensate and dust removal system.

A three unwind stand rewinder TT WIND-H completes the supply.

Established in 1991 and headquartered in Lousã, Trevipapel Group is a leading manufacturer of hygiene professional products (AfH).

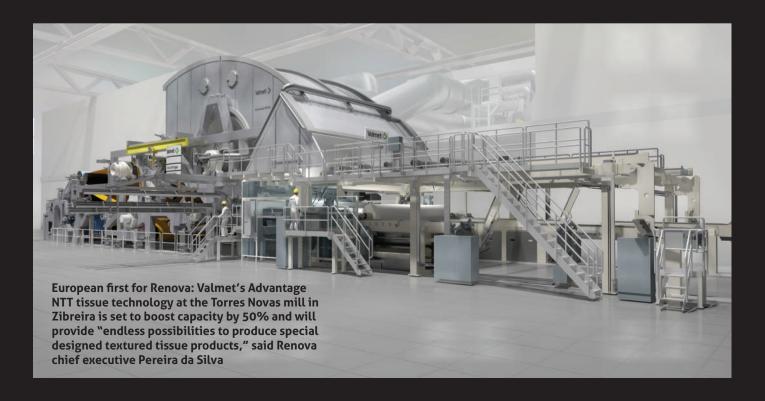
It has two manufacturing plants located in the centre of the country, where it converts 20,000tpy and serves Portugal, Spain, central Europe as well as Africa and South America.

NORWAY

Norske Skog to enter tissue market in joint venture with Roto-cart

Newsprint and magazine paper manufacturer Norske Skog is to replace newsprint production at its Austrian Bruck-based mill with tissue manufacture.

The Norwegian company made the announcement in its second quarter





results, adding that it plans to move into "two new growth areas" – tissue and bioenergy – which will be produced alongside its current publication paper business.

The move into tissue will include a joint venture with Italian producer and tissue distributor Roto-cart.

Total investment for the tissue conversion project is around €80m, with project financing of 75% debt and 25% equity. Norske Skog president and chief executive Sven Ombudstvedt said: "We are entering the tissue market through a joint venture structure with an experienced partner, which limits the market risk and the capital spend for Norske Skog.

"The joint venture will replace newsprint production at Bruck with tissue. Thus, supporting the market balance for newsprint and exposing Norske Skog towards the growing market for tissue."

In July, Norske Skog reported lower margins in its 2015 second quarter results due to "a challenging market".

EBITDA for the quarter was NOK 138m; down from 192m in the first quarter due largely to a "weak publication paper demand in 2015."

It added that the net loss of NOK 571m in the quarter was "significantly impacted by negative other gains and losses amounting to NOK 276m".

The company said demand for newsprint and magazine paper in Europe decreased by 10% and 4% respectively in the five first month of 2015 compared to the same period last year.

In Australasia, demand for newsprint in Australia decreased by around 10% in the first five months of the year compared to the same period last year, while demand for magazine paper was relatively stable.

Total annual production capacity for the group is 2.8m tonnes.

The company will also build biogas facilities at its mills as part of its move to diversify, leveraging bio-waste from the paper production to renewable energy. The construction of such a biogas facility, at Saugbrugs in Norway, will amount to around NOK 150m.

Enova has granted NOK 52m in support to the project, while Sparebank 1 Gruppen and Halden Municipality's pension fund has provided around NOK 100m in debt financing.

Ombudstvedt added: "We are planning to commercialise bio-waste from raw material into gas at our mills.

"Despite challenging markets, we believe that our mill sites are sustainable, and will strengthen their competitiveness by constructing biogas facilities."



GLOBAL

A.Celli Paper announces management changes

A.Celli Paper has appointed Mario Fazzi as its new managing director.

Giuseppe Antonini has been nominated president of A.Celli Paper; Mauro Celli and Alessandro Celli remain at the helm of the family company, taking on the role of vice president and executive director. In a statement the company said: "The nomination answers the strategic needs of the A.Celli Group that aim to meet increasingly important challenges in the quest for new markets and opportunities, continuing along the road to growth characterised by the consistent and continuous technological and innovative development that has traditionally distinguished the company."

Fazzi has over 25 years of experience in tissue converting and packaging as well as knowledge of international markets, in particular Asian markets.

He has held various roles at Fabio Perini as well as the title of managing director of Korber Engineering Shanghai Co.

Cascades reports 3Q sales increase of 4%

Cascades has reported a sales increase of 4% to \$950m for the three month period ending 30 June compared to the same time a year ago.

The company said the result was due to "higher shipments mainly in the Tissue Papers Group and the positive impact of the weakening of the Canadian dollar against its U.S. counterpart".

It added: "These factors more than offset lower average selling prices in the recovered paper segment of the Specialty Products Group, the unfavourable variation of the exchange rate with Europe and an unfavourable product mix in our Tissue Papers Group." President and chief executive Mario Plourde said the results met the company's expectations for the second quarter.

"In the near term, we expect to continue to benefit from positive market conditions, stable recycled fibre costs and the gradual improvement of our tissue paper activities.

"Due to healthy demand, higher input



costs and foreign exchange variations, price increases are being implemented for corrugated boxes in Canada and recycled boxboard in Europe and were announced for some categories of tissue products in North America."

Södra reports strong results

Pulp producer Södra has reported strong results for the first eight months of 2015 due to "high price levels for finished goods" and "mainly favourable" currency conditions.

Operating profit rose to SEK 1,660m compared to SEK 1,012m for the same period a year ago, while sales increased to SEK 12,186m (compared to SEK 11,429m).

EBITDA for the period was SEK 2, 292m (compared with SEK 1,656m).

Chief executive Lars Idermark said: "Södra is performing well. A healthy second four-month period has finished with a historically strong overall result for the group for the period through August.

"This is largely due to high price levels for finished goods and mainly to a favourable currency situation - but also because Södra is becoming an increasingly efficient, innovative and value-generating group."

Idermark added the group's business areas continue to deliver "a very strong performance".

"Stable and efficient production at the mills, while we are investing SEK five billion to increase production, is impressive.

Södra Group appoints Jörgen **Lindquist as CFO**

Södra Group has also announced the appointment of Jörgen Lindquist as chief financial officer.

Heassumed the position on 14 September, when he also became a member of the group's senior management and now reports to president and chief executive Lars Idermark.

Lindquist joins Södra from IKEA where he has spent the past five years working as chief financial officer and acting vice president of the company's industry division Swedspan International.

Prior to this role, he was responsible for IKEA's project to establish new furniture manufacturing facilities in the U.S.

He has also served as chief financial officer and vice president of the Axis Group and held various senior financial positions in the chemical and packaging industries. Lindquist succeeds Carina Olson who previously announced her decision to leave Södra to pursue new challenges.

SCA strengthens hygiene operations

SCA has announced it will strengthen its competitiveness in the hygiene market to "intensify growth and the pace of innovation", making a number of changes to its operations.

Some 85% of the company's sales are derived from its hygiene operations, and as of 1 January 2016 the company will undertake a number of objectives.

They include:

- Reorganising its AfH tissue and incontinence products in Europe and North America into two business units, Away from Home Professional Care (led by Don Lewis, currently president of SCA Americas) and Incontinence Care (led by Margareta Lehmann, currently president of SCA Incontinence Care Europe).
- Latin America will become a new business unit, SCA Latin America, led by Pablo Fuentes, vice president of SCA Latin America.
- Global Hygiene Supply Tissue and Global Hygiene Supply Personal Care are "being strengthened through the respective production activities being given direct reporting lines".
- A project to streamline logistics is also being organised and will be led by Sune Lundin, president of SCA Away from Home Professional Hygiene Europe.

Magnus Groth, SCA president and chief executive, said: "The new organisation provides the preconditions for increasing efficiency, the pace of innovation and profitable growth for our global hygiene operations.

He added that the organisational changes have no impact on SCA's external financial reporting structure.

Additionally, the SCA Group has also been divided into two divisions: a Hygiene division and a Forest Products division.

In relation to the Forest Products division, all forest industry and forest land currently owned by SCA will be merged into one division.

A decision has also been made to invest in increased capacity for pulp production in the forest products operation.

Groth added: "The enhancement of the organisation and the investment in increased pulp production will secure the long-term competitiveness of the businesses."

Work to realise this consolidation has begun.

To satisfy the growing demand for pulp, SCA has decided to invest in increased capacity for pulp production at the Östrand pulp mill in Timrå, Sweden.

The production capacity of bleached sulphate pulp will increase from 430,000tpy to 900,000tpy.

Production for the SEK 7.8bn investment is expected to commence in 2018.



'A historically strong overall result for the group largely due to high price levels for finished goods and mainly to a favourable currency situation.' President and chief executive Lars Idermark



Voith launches TissueForm ITY forming fabric

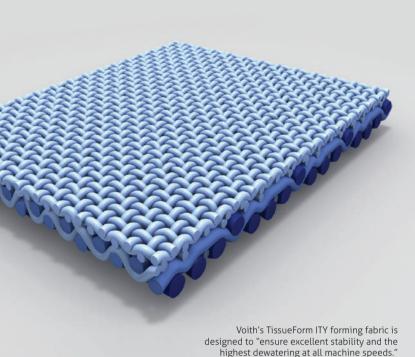
Voith has launched a forming fabric that is said creates optimal performance in tissue production. The TissueForm ITY forming fabric is designed for challenging applications in tissue production and "ensures excellent stability and the highest dewatering at all machine speeds", according to the company.

It combines a very fine two-shed paper side to obtain a smooth surface with a four-shed wear side.

The woven structure of the fabric ensures fast drainage and a high level of sheet support while maximising dimensional stability.

Its design is based on the patented woven structure of the I-Series and its proven 3:2 warp ratio.

Voith added that the new forming fabric TissueForm ITY has already been successfully deployed in the industry many times and has demonstrated that it delivers excellent dewatering performance and fibre support also at very high speeds.



ROMANIA

Metalicplas boosts capacity with installation

Metalicplas has expanded its production tonnage after it signed for a new tissue machine from supplier A.Celli Paper.

The tissue producer is part of Pehart Group Companies and the PM purchase follows the investment in the company by private equity fund Abris Capital Partners in May 2015.

The high-speed tissue machine has a production capacity of 34,000tpy.

The Pehart group of companies has three production facilities producing tissue paper and finished goods (toilet paper, kitchen towels and napkins) under its own brands – Pufina and Alint. The group also produces private label products.

The new Tissue Machine, with a 2,800mm width at the pope reel and a maximum speed of 1,800m/min is part of a complete turnkey project that includes the "Control & Automation" system, together with all ancillary equipment.

It also includes the latest-generation hood design and the 15-foot Yankee cylinder. In view of the start-up scheduled for the end of 2015, the first delivery left Lucca at the beginning of July bound for Metalicplas.

ITALY

Valmet acquires tissue rewinder business from Massimiliano Corsini

Valmet has acquired MC Paper Machinery and Focus Rewinding from Massimiliano Corsini.

The acquired operations mainly supply rewinders for tissue and non-woven machines

In the past years the net sales of the acquired business has been around €10m. The operations employ 33 people and are located in Pescia, close to Lucca, Italy.

As a result of the acquisition, Valmet said it will have a more extensive product portfolio and becomes a stronger technology and services company in its field.

It said: "The acquisition strengthens Valmet's competitiveness by combining tissue making equipment from stock preparation to rewinding, process knowhow, automation and services into one customer value-adding entity.

"Valmet and MC Paper Machinery have had a long-term partnership and a large amount of MC Paper rewinders have been installed in connection to Valmet tissue machines. "The company being acquired is a strong business, with established customer relations and a high level of technology and know-how, including the successful Focus technology."

Toscotec absorbs Milltech into business

Toscotec has absorbed its tissue machine hood and ventilation sister company Milltech into its tissue technology business. The PM supplier purchased Milltech in 2012 and has since operated it as a separate company.

All of Milltech's staff have transferred to Toscotec, including managing director Luca Linari, who takes on the role of sales and product manager for energy and environmental systems for Toscotec. Toscotec managing director Alessandro Mennucci said: "This is a natural evolution for us. When we acquired Milltech it created an ideal synergy because minimising energy consumption is central to our technological vision.

"Milltech has proved its worth in this respect, but there is no longer any benefit from it remaining a separate company. "Its manufacturing facilities are already on site here at Toscotec and it is strategically rational to operate as one entity."



OMET reports record sales

OMET has reported record sales in Italy in the first half of 2015 and said it is on track to continue its run of double-digit percentage growth in sales seen over the past five years.

The company said it is seeing a steady increase in exports to Europe as well as other parts of the globe.

It added that despite the difficult economic slowdowns in the Italian market, its sales continue to grow.

Since Januray, some 10 printing presses were sold by OMET in Italy.

Enrico Gandolfi, OMET sales, Italy, said: "The market is rewarding all the efforts made on the technological side, to achieve a level of excellence, and the marketing and sales strategies taken so far.

"Our customer base include the largest multinational packaging leaders, evidence of the production efficiency and reliability of OMET's products."

FRANCE

SCA closes tissue plant in France

SCA has announced the closure of its Saint-Cyr-en-Val-based production plant

The company said the move was part of its on-going cost-savings programme related to the acquisition of Georgia-Pacific's (G-P) European tissue operations. Production will be discontinued at the 120-staffed site in October 2015 and the site has an annual capacity of 35,000 tonnes.

Restructuring costs for the closure of the plant are expected to amount to approximately SEK480m.

Total cost savings related to the acquisition of G-P's European tissue operations are expected to amount to EUR125m upon full effect in 2016.

II headbox and an Advantage ViscoNip press for improved product quality and decreased energy consumption.

A new tail threading system and sheet transfer will further advance runnability and performance.

Start-up of the rebuild is scheduled for the first half of 2016 and the value of the order will not be disclosed.

Christoph Zeiler, senior vice president Tissue West Europe, Metsä Tissue, said: "We continuously develop our products, operations and production units to be able to supply high-quality tissue products and to ensure reliable deliveries to our customers.

"Through this tissue machine renewal in Raubach mill, we aim to enhance the product qualities as well as energy efficiency and process performance in a sustainable way."

Metsä Tissue is a leading tissue paper products suppliers to households and professionals in Europe.

LITHUANIA

GRIGIŠKĖS targets tissue business with €6m loan agreement

GRIGIŠKĖS has signed a six million euros loan agreement with Nordea Bank for development of its tissue paper business. The producer has also completed a €20 million investment project this year during which a new paper manufacturing machine was acquired and installed.

GRIGIŠKĖS company president Gintautas Pangonis said: "This year the manufacturing capacity of tissue paper already amounts to 47,000tpy and we can sell some of it to other paper product manufacturers ourselves."

The company's strategy is to create higher added value: "We are already taking the first steps to increase the capacity of processing the paper to endcustomer products.

"We will achieve this by carrying out the next phase of investment to the tissue paper business with the help of the new loan and our own funds."

Throughout 2016 the company plans to invest more than nine million euros. Pangonis added: "This investment will be used to expand the manufacturing facilities and purchase a new domestic paper products production line which will increase the domestic paper products sales by at least 30%."

SPAIN

Gomà-Camps becomes sole shareholder of GC & Wepa

Gomà-Camps and WEPA Group have ended the joint cooperation they have maintained for the last 10 years through the joint venture GC & Wepa.

Gomà-Camps acquired Wepa's shares in the business to become the only shareholder of the new company, Gomà-Camps Consumer.

It will continue at its current location in Ejea de los Caballeros (Zaragoza, Spain). Development of the initial project, which involved creating an integrated manufacturing site for tissue paper that specialises in consumer products to supply the Southern European market, will continue.

GERMANY

Metsä Tissue boosts capacity in Germany

Metsä Tissue is to increase its tissue capacity at its Raubach, Germany-based site after it signed up Valmet to upgrade

The rebuild includes a new Advantage DCT wet end section with an OptiFlo Tis

UK

SCA's Skelmersdale investment doubles site's capacity

SCA has boosted its tissue capacity in the UK after construction at its Skelmersdale tissue site was completed.

Work started 18 months ago and included a new production hall as well as the installation of 10 additional lines, including two new lines supplied by Bretting and PCMC.

Over 140 jobs were created at the site, and the investment also included a new distribution centre in Ashton-in-Makerfield.

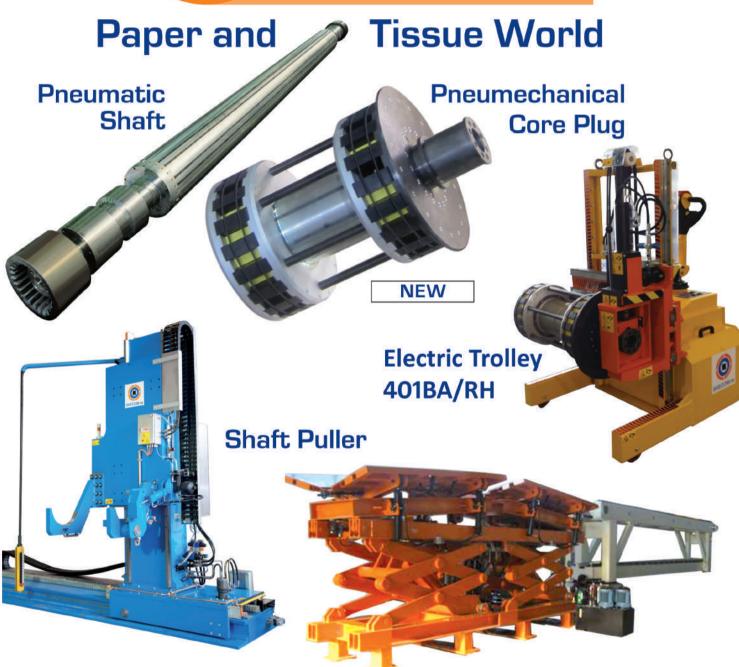
Skelmersdale is now SCA's second largest tissue production site in Europe for the AfH market, producing Tork-label products for major customers including local authorities, the NHS, hotel chains and motorway services.

A converting mill, the Skelmersdale site takes in mother reels of paper made at other SCA mills in the UK and converts this into the finished products.

Its products also include Velvet tissues and own brand tissue products for leading supermarket chains.

The new lines in the investment included the Tork SmartOne line, a state-of-theart single sheet dispensing system that reduces toilet tissue consumption and costs for professional customers by up to 40%.





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Other new lines at the mill include Europe's first single dispenser for paper napkins, an innovative system designed to save consumption and costs for customers such as fast food restaurants.

Site manager Mark Mannering said: "This major investment underlines SCA's commitment to the long-term future of the Skelmersdale operation."

The increased production at the mill will reduce imports from other European sites to the UK market and also give the mill a greater capacity for exporting its products overseas.

SWEDEN

Sofidel boosts Nordic presence

Sofidel's Swedish subsidiary Swedish Tissue has boosted its capacity after it started up a new converting plant in Kisa. The new converting plant is now fully operational with two active production lines: the first line is focused on toilet tissues, whilst the second line can produce

both kitchen towels and toilet tissues.

It is the group's most automated production site and its integration has saved the company around 40% of space.

This project was particularly challenging as its implementation involved the diversion of the Kisa river by approximately 300 metres

The plant is also distinguished by the automation choices made for the production process.

By adapting techniques mainly used in the food and beverage sector, Sofidel developed an automatic reel conveying system process for the first time in its history, which transfers them between the paper mill and the converting plant, and the fully automated control system of the finished product: from the line ends to the loading bays via the warehouse.

This choice has saved approximately 40% of the space.

The plant produces private label products intended for the Nordic markets, in particular Sweden, Denmark, Finland and Norway.

With over 100 years since its establishment, Swedish Tissue represents a historical paper production site.

Sofidel said the move is an indication

of the importance of the region and the company's desire to strengthen its position in the Nordic countries.

The Sofidel Group is a world leader in the manufacture of paper for hygienic and domestic use.

Founded in 1966, the Group has subsidiaries in 13 countries – Italy, Spain, Sweden, the UK, Belgium, France, Croatia, Germany, Poland, Romania,

Greece, Turkey and the USA – with more than 5,200 employees.

Sofidel is the second ranking group in Europe in terms of production capacity in the tissue sector (1,050,000 tonnes per annum).

Swedish Tissue is located in the Municipality of Kinda in Östergötland County, Sweden.

It has a fully integrated tissue process and produces parent reels and finished consumer products.

Since 2010 the company has formed part of the Italian group Sofidel.

Swedish Tissue employs 165 staff and has a turnover of Euro 82 million (31 December 2014) and has an annual production capacity of 56,000 tonnes (31 December 2014).



Swedish Tissue's new converting plant in Kisa consists of two active production lines: the first focused on toilet tissues, the second producing both kitchen towels and toilet tissues



CHINA

Clearwater reports net sales drop after selling speciality mills

Clearwater Paper Corporation has posted net sale results of \$444.6m for the second quarter of 2015, down 10.9% year-on-year.

The company said this was primarily due to the sale of its specialty mills in December 2014.

Adjusted EBITDA for the quarter was \$50.7m, down 11.6% compared to second quarter 2014 adjusted EBITDA of \$57.3m.

The decrease is said to be due to costs associated with scheduled major maintenance at the company's Arkansas pulp and paperboard mill and the sale of its specialty tissue mills, partially offset by lower input costs for pulp, chemicals and natural gas.

Its consumer products division reported net sales of \$239.4m for the second quarter of 2015, down 20% compared to second quarter 2014 net sales of \$299.1m.

This decrease was due to the sale of the specialty tissue mills.

Total tissue sales volumes of 96,220 tonnes in the second quarter of 2015 declined by 28.6% and converted product cases shipped were 13.1m, down 6.9%.

Average tissue net selling prices increased 12.0% to \$2,482 per tonne in the second quarter of 2015 due to improved product mix after the sale of the specialty mills.

Linda K. Massman, president and chief executive, said: "Clearwater Paper delivered strong results that exceeded the high end of our outlook for the second quarter of 2015.

"Our consumer products business has continued to demonstrate the ability to increase operating leverage, execute on its plan to improve efficiencies throughout the organisation and expand its customer base."

Hangzhou Nbond Nonwoven starts up flushable wipes line

Hangzhou Nbond Nonwoven has started up a new flushable wipes production line. Supplied by Voith and Truetzschler, the new production line is the first in the Chinese market to use the wetlaid spunlacing (WLS) concept of the HydroFormer and AquaJet technology.

It reached an operating speed of 200m/min three days after it was started up.

The production line uses wet-laid technology with cellulose fibre as raw material for the production of flushable wipes and is Nbond's eighth line.

It has a 3,750mm wire width and 250m/min design speed.

Nbond produces flushable wipes within a basis weight range of 50 to 80g/m² and will achieve an annual capacity of up to 15,000 tonnes.

Voith supplied the HydroFormer; with its technology the suspension is highly diluted so nonwovens can be produced entirely from cellulose.

Truetzschler supplied the AquaJet technology, a drum dryer and a winder. The line will play an important role for Nbond in strengthening its market position in China and in the global non-woven fabric market.

Lee & Man Paper boosts capacity

Chinese pulp and paper producer Lee & Man Paper has signed up Valmet for a repeat order of two Advantage DCT 200HS tissue production lines.

The new tissue machines will have a

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width of 5.6m and a design speed of 2,000m/min.

Each machine will produce 60,000 tonnes of toilet and facial tissue per year, using virgin wood pulp and bleached bamboo fibre as raw material.

Start-up is planned to take place in late 2016 and the value of the order has not been disclosed.

Valmet's scope of delivery will comprise of complete tissue production lines featuring stock preparation systems and Advantage DCT 200HS tissue machines. The machines will be equipped with OptiFlo headbox and cast alloy Yankee cylinders.

The machines will also be featured with the well proven Advantage tissue technology including ViscoNip press, steam heated AirCap hood, WetDust dust system and a SoftReel P reel.

In 2014, Lee & Man ordered an Advantage DCT 200HS tissue line which is planned to start up at the Chongqing mill later this year.

Established in 1994, the company now has 6,500 staff located at its five production sites in China.

Vinda appoints Christoph Michalski as CEO

Vinda International Holdings has appointed the president of SCA's Global Hygiene Category Christoph Michalski as chief executive.

Effective as of 1 October, the company said the move "represents a clear commitment from SCA and Vinda to strengthen their long-term cooperation".

SCA is the majority shareholder in Vinda, one of China's largest hygiene companies. Magnus Groth, president and chief executive of SCA, said: "Christoph Michalski's extensive experience in consumer goods will benefit Vinda and SCA, given SCA's position as the majority shareholder in Vinda.

"Christoph has made an excellent contribution to SCA, enhancing the innovation process at the company and thereby increasing the number of product launches, strengthening our brands, such as TENA and Tork."

The recruitment process to identify Michalski's successor has been initiated. Following the transfer to Vinda of SCA's hygiene business in China in late 2014, SCA said it and Vinda "have a clear and continued interest to explore stronger collaboration opportunities in Asia going forward".

It said: "Such collaboration would

strengthen the integration of resources between SCA and Vinda, and offer mutually competitive advantages."

Liuzhou Liangmianzhen Paper Product boosts capacity

Liuzhou Liangmianzhen Paper Product has started up the second of two MODULO-PLUS ES tissue lines supplied by Toscotec at its mill in Liuzhou, Guangxi.

A TT WIND-M high-speed slitter rewinder will also be started up in the next few weeks.

Following the start-up of the first Toscotec-supplied tissue machine on 11 September at Liangmianzhen Paper Product mill, the start-up of this second tissue line was also achieved according to schedule.

These two new lines will increase the company's tissue production by 42,000tpy. Toscotec's scope of supply includes a MODULO-PLUS ES machine, designed for a speed of 1,500m/min, featuring TT SYD-15FT (4572mm) and double press configuration, Milltech's steam-heated hood, stock preparation equipment, electrical and control systems, spare parts for the entire plant and a full service package.

AMERICA

Resolute Forest Products boosts production

Resolute Forest Products has increased its product offering after it invested in Valmet's Advantage NTT 200HS tissue machine.

The new tissue line will have a width of 5.2m and a design speed of 2,000m/min. It will be installed at the company's new facility in Calhoun, Tennessee, and will produce at-home, premium private label tissue paper including bath and towel.

Valmet's scope of delivery will comprise a complete tissue production line equipped with a layered OptiFlo headbox and a cast alloy Yankee cylinder.

It will also be featured with the Advantage tissue technology, including an AirCap hood and a SoftReel -B.

Start-up is planned for early 2017 and the value of the order has not been disclosed. The Advantage NTT tissue production technology is designed for maximum flexibility as well as enhanced product quality.

Valmet said: "It can easily change between production of conventional tissue and textured tissue in just a few hours.

"It has been well received by the market, and this will be the fifth NTT machine to be delivered."

The first Advantage NTT line was started up in Mexico in 2013, the second line started up in the second quarter of 2015 in Chile, a third NTT line will be started up in Abu Dhabi in 2015, followed by a fourth NTT line in the U.S. in early 2016. Resolute Forest Products is a global leader in the forest products industry with a diverse range of products, including newsprint, speciality papers, market pulp and wood products.

The company owns or operates some 40 pulp and paper mills and wood products facilities in the United States, Canada and South Korea, and power generation assets in Canada.

Clearwater Paper in \$160m upgrade of Lewiston mill

Clearwater Paper is to upgrade its Lewiston mill in Idaho in a \$160m investment.

The tissue producer is constructing a new continuous digester which was expected to begin in October 2015 and is expected to be completed in September 2017.

Benefits from the project include significant reduction in air emissions, improved pulp quality and production, and more efficient utilisation of wood chips.

Jay Backus, Clearwater Paper's vice president of mill operations in Lewiston, said: "After many months of detailed review and reaching a multitude of milestones, the project is now a reality." During construction and start-up, the project will require hundreds of contract workers from around the globe.

Due to increased wood purchasing, the project is also expected to require additional need for loggers and other related contractors.

Clearwater Paper manufactures quality consumer tissue, AfH tissue, parent roll tissue, bleached paperboard and pulp at manufacturing facilities across the nation.

The company is a premier supplier of private label tissue to major retailers and wholesale distributors, including grocery, drug, mass merchants and discount stores.



South Africa – locally focused and underdeveloped T&T market



lobally, Africa (Sub-Sahara and North Africa combined) is not a significant producer of Pulp and Paper (P&P) products. The region is fifth out of six (just ahead of the Middle East) in total P&P production and sixth out of six in Towel and Tissue (T&T) production. (Fisher can roll up data by six global regions defined as: Africa, Asia, Europe, Latin America Middle East and North America.)

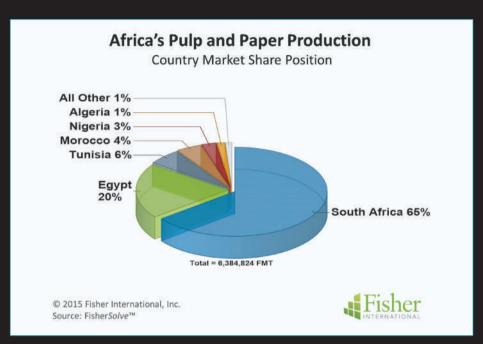
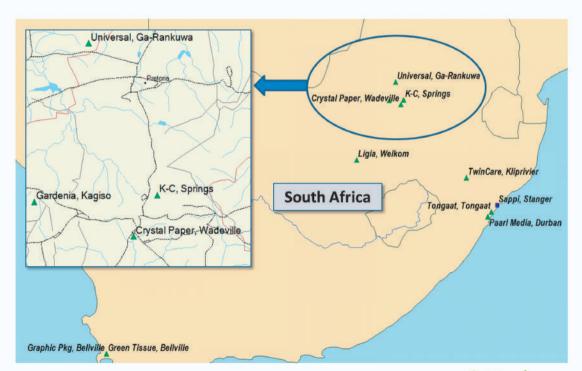


Figure 1 Africa Pulp and Paper Market Share

South Africa's T&T Mill Locations



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Source: FisherSolve™







By Fisher International's Bill Burns

With a population in excess of 1 billion people and growing, Africa is second only to Asia with 4.3 billion in market potential. Within Africa, P&P production is concentrated in two areas, South Africa and Egypt, with South Africa holding the highest share at 65% (Figure 1). T&T capacity is also distributed between these two significant producing countries (Figure 2). Within South Africa, the distribution of grades is heavy on Market Pulp and Packaging while Printing and Writing, T&T, and Newsprint are each less than 15% of production (Figure 3).

Broadening the country T&T comparison a little further, it is interesting to note that mill capacities are relatively small throughout the continent. Egypt averages higher than the remaining countries in Africa with approximately 50,000 MTPY which is low compared to other parts of the world. On the continent, South Africa is 3rd with a very modest average mill capacity rate of about 25,000 MTPY (Figure 4).

Tracking capacity trends in recent history is an important task for understanding T&T production in Africa. The relationship between large populations and low production numbers in today's global economic environment might lead you to expect a growing market with positive forecasts and announced projects. That is not the case in Africa where there has been very low growth over the last 7 years and very little growth is projected going by current announced changes (Figure 5). Concentrating just on South Africa, the trend line shows both ups and downs over the same 7-year period. More recently, two mills shed some tonnes in 2011 and one new mill came on line in 2012 resulting in a lack of perceivable growth or shrinkage (Figure 6). There are some announced capacity increases for 2015 which, if materialized, would add approximately 25% capacity

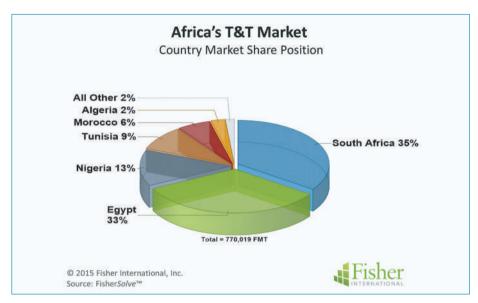


Figure 2 Africa T&T Market

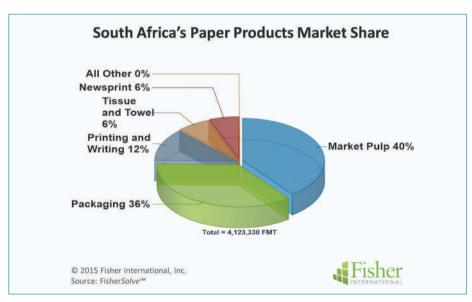


Figure 3 South Africa Paper Products Market Share

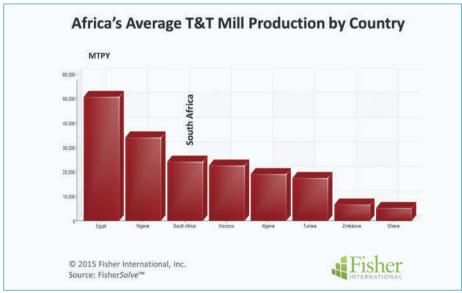
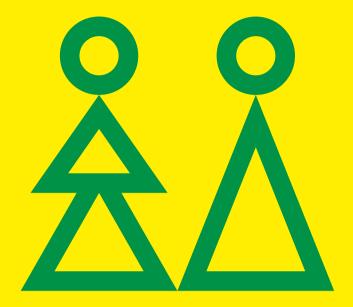


Figure 4 Africa Average T&T Mill Production by Country



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By Fisher International's Bill Burns

to the country. While 25% sounds like a major change, the area is still underdeveloped from a T&T product saturation standpoint.

Fibre sources and machine specifications are the two most commonly considered issues for production. understanding T&T Fibre mix in Africa's T&T production represents a diverse set of strategies from all Recycled fibre to various combinations of Kraft and Recycled (Figure 7). In South Africa, a combination of Kraft. Soda and Recycled fibre is profiled.

Machine speeds and trims are equally significant indicators in assessing the competitive position of T&T production. In Africa the machines tend to be uniformly narrow (2.5 metre) in trim. Speeds, on the other hand, range from slow (400 mpm) to moderate (1500 mpm). South Africa's machines average on the lower end in both categories (Figure 8).

To the extent that African countries can be ranked competitively against peers - given the gulf in GDP across the continent and among the T&T producers (Zimbabwe's annual GDP is \$20 billion while Nigeria's is \$568 billion with South Africa falling in between at \$352 billion) - South Africa holds a very competitive cost position. mills, on average, represent the second lowest cost position in Africa (Figure 9). Combining low cost with a 35% market share puts the country in a very respectable competitive position. South Africa's key advantage is fibre cost, which is also the highest contributor to cost in most if not all T&T operations worldwide. Key disadvantages are energy and labour. Energy, especially power cost, is high in South Africa compared to other countries. Labour cost varies from higher-than to lower-than other countries with a slight disadvantage to countries with larger market shares.



Figure 5 Africa T&T Market Growth Trend

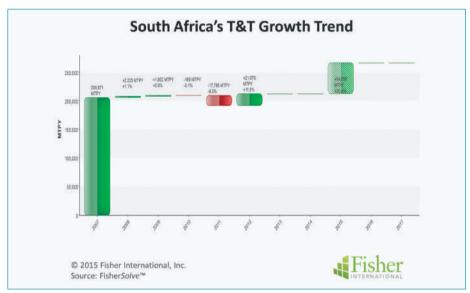


Figure 6 South Africa T&T Growth Trend

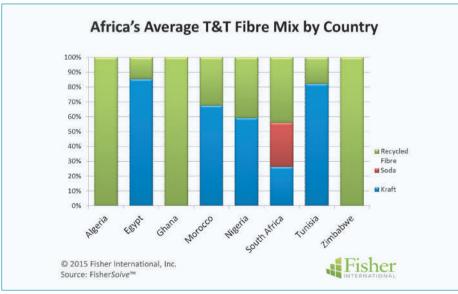


Figure 7 Africa Average T&T Fibre Mix by Country

By Fisher International's Bill Burns

South Africa's carbon footprint is a potential future cost issue; it has the highest carbon load of the African T&T producing countries (Figure 10). The issue is, again, purchased power. South Africa is very heavily dependent on coal for manufacturing and power generation. For mills burning coal and pulling power from coal generation-based utilities, this could become a cost issue as regulations force mitigation or conversion to alternative sources of power.

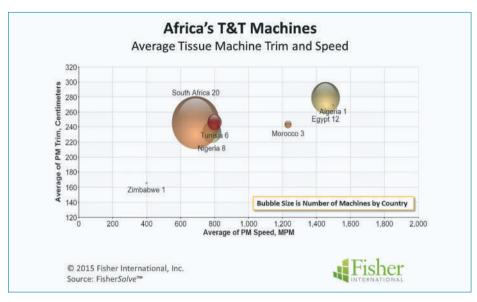


Figure 8 Africa T&T Machines Capacity

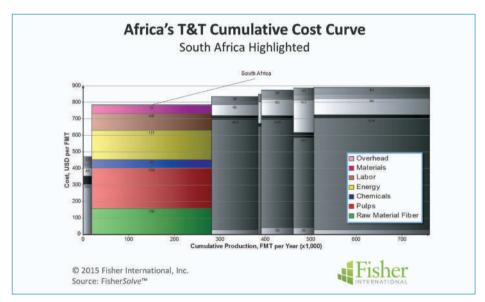


Figure 9 Africa T&T Cumulative Cost Curve Highlighting South Africa

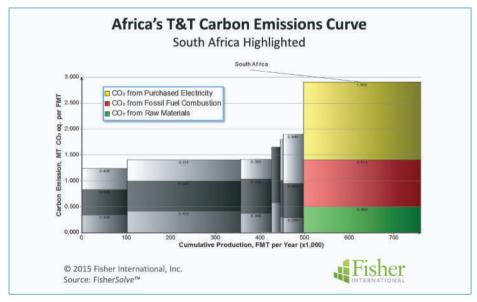


Figure 10 Africa T&T Carbon Emissions Curve Highlighting South Africa

The source for market data and analysis in this article is FisherSolveTM. Data tables behind Figures 1 - 10 can be obtained from Fisher International. E-mail requests to info@fisheri.com.

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South Africa: budget constraints hinder demand for consumer tissue

he fifth member of the BRICS, South Africa is seen as a major developing consumer market and is a focus of strategic initiatives and planning by domestic and international industry players. The country also ranked highly among its regional peers in the Ease of Doing Business 2015.

However, the rising cost of utilities and fuel as well as labour unrest, coupled with the falling exchange value of the South African rand, all contributed to South Africa's poor economic performance in 2014. Subsequently, consumer income levels remain under significant pressure, especially for low-income households. Furthermore, proportionally the country 's middle class households - the key factor behind spending on consumer goods in developing countries - did not increase over 2009-2014, lingering around 14.5% of the total households in the country, while their disposable incomes grew by a modest 2% CAGR over the same period.

Toilet paper saves the day

Weak economic performance has had an unfavourable impact on demand for household goods and resulted in a major rationalisation of consumer spending on tissue products, with many South African households turning to toilet paper for all their tissue needs. Toilet paper remains by far the largest and the best performing category in retail tissue in the country. Moreover, tight consumer budgets

inhibited have wider consumer acceptance value-added tissue products. Demand for recycled products, typically higher priced, also remains **Financial** low insecurity shapes consumer preferences, environment is not on the top of the



agenda for most households at the moment.

Focus on economy and value shapes competitive landscape

The low purchasing power of many South African consumers is pushing them towards cheaper retail tissue options, which creates good opportunities for private label but presents challenges for branded products manufacturers to generate higher margins and revenues in consumer tissue business.

In 2014, private label products saw double digit growth in sales in value and volume in the country. Also, significant

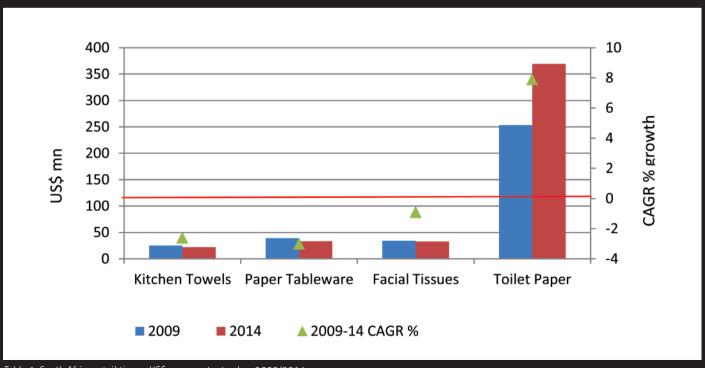


Table 1: South Africa retail tissue, US\$ mn, constant value, 2009/2014

By Euromonitor International's Svetlana Uduslivaia

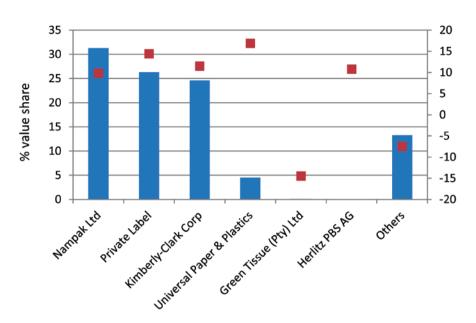


Table 2: South Africa retail tissue: 2014 % company value share and 2013/2014 % sales growth

Source: Euromonitor International

emphasis on value and price were among the factors that until recently supported the leading position of Nampak in South Africa's retail tissue, as the company marketed a wide range of affordable products under Twinsaver. However, in late 2014 the company announced a number of changes in its operations, which included the sale of tissue division completed in 2015. In the words of the Nampak chief executive André de Ruyter "The disposal of these businesses forms part of Nampak's portfolio optimisation strategy to unlock cash from low-margin divisions and redeploy it into highyield and high-growth opportunities in the rest of Africa."

Nonetheless, while economy and price dominate the agenda for the majority of consumer spending, there is a room for quality and value-added products that address the needs and wants of wealthier households and rising urban consumer. Kimberly-Clark's strong position and further expansion in the country attest to the potential in mid-priced and premium price segments, especially as a strategy for long term growth. The company continues to pursue opportunities in South Africa as a part of a five-year expansion strategy launched back in 2011 which includes brand innovation, investment in local production facilities, geographic expansion, and possible acquisitions. Kimberly-Clark's innovation in 2014 included an environmentally-friendly product under the brand Baby Soft within toilet paper. Enviro-Roll toilet paper is available in 2-ply format and designed to be eco-friendly, space efficient and cost effective. The production of Enviro-Roll is also FSC-compliant, being made using sustainable sources and responsible forestry, reducing therefore its impact on the environment. In the same year the company also ventured into moist toilet paper in South Africa, a novel category for the country. Kimberly-Clark introduced Baby Soft moist and flushable toilet wipes, which it refers to as 'washlets'.

Mixed prospects ahead

Given the low levels of consumer confidence in South Africa, rising inflation and still weak job creation trend, the growth prospects for retail tissue are mixed. Overall, Euromonitor projects that retail tissue will see a very healthy 9% CAGR increase in volume over the next five years through 2019. Value of retail tissue sales, on the other hand, is expected to record only a modest 2% CAGR, reflective of continuing

strong emphasis on economy and affordability on the part of consumers. Furthermore, growth will be driven chiefly by toilet paper as many South African households will likely continue to rely on toilet paper to meet most of their tissue needs.

Products like kitchen towels, paper tableware and facial tissues are expected to see a negative value over the next five years, although a modest positive trend in volume terms. With widespread poverty, most South Africans see these as discretionary luxuries they cannot afford.

Consumer demand for low prices will continue to benefit private label. On the other hand, branded products manufacturers will likely use promotional activity and emphasise smaller package size to respond to the needs of budget-strapped South African households. Promotional strategies will help buoy volume of sales, but will continue to adversely affect profit margins.

However, long term prospects might not be as bleak, and more opportunities for the consumer tissue industry are likely to open up with improved long term market outlook. Additionally, although slower than in many other markers, middle class households are expected to increase in numbers. While proportionally they will continue to account for about 14.5% share of the total households, the actual number will increase by over 1% over the next five years to over 2.3 million households in 2019. More importantly, average disposable incomes of the middle class households in South Africa are expected to see a 3% CAGR increase over the next five years. This represents a somewhat accelerated pace of growth compared to the past five years. Middle class consumers will present a good opportunity and a platform for the industry revenue growth. Investment in a wider product portfolio, from economy to valueadded consumer tissue, can help to secure gradual trading up and improve prospects for long term growth.

Sub-Sahara Africa: An expanding main market opportunity ... long term

At Kimberly-Clark's Enstra mill in South Africa they can't make enough tissue to meet the demand. TWM spoke to the man who aims to steer the tissue giant towards that potential growth as consumers' trading-up becomes more and more routine.

outh Africa, known for being the rainbow nation, boasts a population that is uniquely diverse. Spanning nine provinces, it's home to over 51 million people. Driving through the busy streets and into the outskirts of Johannesburg, the diversity of the consumer base is very evident. We pass grand, high-security houses next to high-rise, designer shopping malls, areas of mass regeneration, as well as local corner shops on the edge of overspilling townships and spaza shops.

"Providing the essentials for a better life is key to the way we do business", says Tony Hulme, mill manager for Kimberly-Clark Enstra mill. "We place our consumers at the heart of what we do and are always providing consistent, quality products."

The Enstra site is based in the province of Gauteng, which was formed from part of the old Transvaal Province after South Africa's first democratic elections in 1994. It encompasses two of the country's largest cities - its

administrative capital Pretoria, and also its largest city Johannesburg. Both are highly urbanised and with its population of nearly 12.3m people, it provides a large percentage of the company's customer base.

Hulme is an Englishman and brings a little extra diversity into the mix himself. He says that on average the tissue market is increasing year on year by 7% with more consumers entering the market place and a large portion of the existing consumer base starting to switch from using one-ply products to two-ply products. "Our offerings ensure that we speak to the consumers' need with offering both a value as well as a premium twoply offering. However, demand for tissue is simply outstripping supply and it is therefore essential that we continue searching for ways in which we can ensure consistent supply of our products to consumers.

Kimberly-Clark South Africa has been operating in South Africa for just under 80 years and has a tissue



"Current market research still indicates that having access to environmentally-friendly products would be nice for consumers, however, when it comes down to the wire, they are not quite ready to pay a premium for this."



The Enstra Facility based in the province of Gauteng which encompasses two of the country's largest cities, its administrative capital Pretoria and its largest city Johannesburg

By Tissue World magazine editor Helen Morris

manufacturing and converting facility based on the outskirts of Johannesburg. The site houses a recycled fibre plant - the only one of its kind in Africa - two tissue manufacturing assets and six converting lines. On average the facility is able to supply around 54,000 tonnes of tissue that is converted into 1 and 2-ply bath tissue an away-fromhome (AfH) products. Some 25% of production is for use in AfH products while 23% of production is dedicated for private label.

On arrival, the company's global "brand-first" attitude is very evident: throughout its 6.7 hectare facility there are clear reminders of the leading brands that the company "We produces. firmly helieve that in order to drive successful business performance, we need engaged employees and have been on a journey to ensure that we create a great place to work for our employees. Being proud of who we are, what we produce, our values and the behaviours we demonstrate daily is just as important to us as ensuring we have best-in-class technologies and skills in our teams. Our vision is for every employee to be a brand ambassador."

Kimberly-Clark's branded bath tissue range BabySoft® is the market leader in the branded bath tissue category according to marketing manager Tamaryn McPherson: "Our brand promise of softness to the consumer remains key and even though consumers are constantly facing the impacts of the economic downturn, we find that their need for the softness and quality that the BabySoft® product provides them ensures that they keep on returning to the shelf." Kimberly-Clark recently introduced a moist toilet tissue to their range: "Introducing this product allowed us to change the conversation with consumers. It helps to shift the perception that toilet tissue is about personal care and not merely household care," she added.

Acting responsibly towards the environment is another focus point for Kimberly-Clark and the site has been FSC certified for the past 10 years. The company has another manufacturing facility based in Cape Town and both sites are landfill free and environmentally-friendly products remains an avenue that



"Demand for tissue is simply outstripping supply and it is essential we continue searching for ways in which we can ensure consistent supply of our products to consumers."

Tony Hulme

the team is still exploring. "Current market research still indicates that having access to environmentally-friendly products would be nice for consumers, however, when it comes down to the wire, they are not quite ready to pay a premium for this," says McPherson. Hulme adds that the perception around recycled

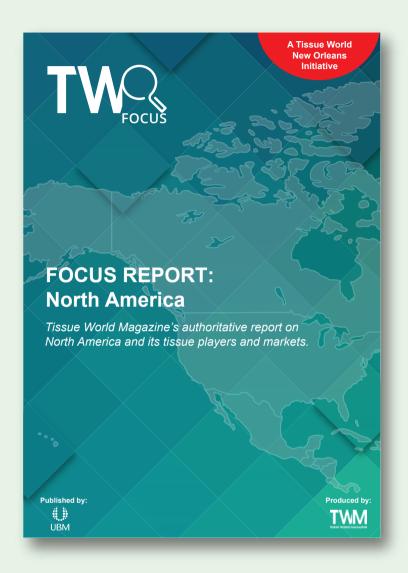
tissue products still needs to evolve with consumers: "They believe these types of products to be browny in colour, which is just not appealing to them compared to the white tissue products that they are used to."

Although understanding of FSC is still very limited amongst South African consumers, K-C says it is making conscious efforts to ensure that visibility and understanding is created of its commitment to use responsibly sourced fibres. Walking around the recycled fibre plant, Hulme explains that the site's paper waste recycling plant is "unique in the whole of Africa, even for K-C." It recycles 42,000 tonnes of waste paper per year. "There is currently a huge demand for recycling paper, so we're supplying several other companies with recycled fibre at present."



The site's bath tissue range

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By Tissue World magazine editor Helen Morris



Project teams continue to deliver innovation

Hulme adds that there is continued focus on improving the technical capability of the site's assets: "We run according to best-in-class standards and we continue to invest in ensuring our teams are developed to ensure we deliver on our promise of providing quality products to consumers."

At present, K-C South Africa exports some finished product into West, East and Central Africa. Hulme adds "Although these exports are still small in volume, we have a growing market there and will be looking at effective options to increase supply to this market".

For now, the local market holds plenty of challenges and opportunities. Price

inflations on the back of Rand-Dollar, Rand-Euro exchange rate fluctuations are impacting businesses everywhere. Specifically for the tissue sector, pulp prices - especially in the last six months - have been "very, very tough," according to Hulme. "Every month the rand has changed significantly and we're seeing inflation across the board in all categories." As these pressures set in, the consumer is continuously faced with the question of whether they can afford to go two-ply and the risk that consumers downgrade to one-ply is forever present. Hulme stresses "that is why we must ensure the consumer continues to get value and performance when buying our brands."

Tissue use is still fairly small but growing in South Africa and K-C keeps an eye on Brazil and other South American countries where tissue markets are more similar than the steady but flat demand seen in Europe. "These countries also provide us with good insights on how we go to market in our traditional trade, which is a fast growing segment for us," adds McPherson.

Significantly, it is the changing dynamics of the local population that hold the most potential for the site. Hulme believes prospects will continue to change significantly in the next few decades. K-C South Africa is in for the long haul.



One of two tissue manufacturing assets located at the Enstra mill

Niche innovation is key at Universal

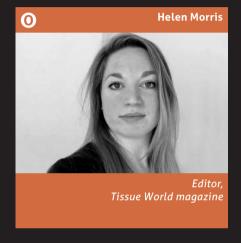
Inhibiting exchange rates, rising energy costs, changing consumer habits, struggling economy ... no wonder Universal Paper & Plastics has become creatively self-sufficient. TWM talks to three members of the founding Sher family.

he roads are lined with glorious, blooming Jacaranda trees on the drive to the Universal Paper & Plastics (UPP) plant which is situated in Ga-Rankuwa. Ga-Rankuwa - meaning "we are not taken" - lies within the Gauteng province, where the family owned business of 65 years is currently situated.

TWM met with managing director Barry Sher and his sons David and Jonathan, both directors of the company and the fourth generation working in the business. They are softly spoken and eloquent

as they discuss the challenges and opportunities of running an independent tissue business in Southern Africa, with topics ranging from the local consumer base to printed designer tissue products.

In 2002, UPP decided to manufacture water based flexographic inks for printing its tissue products as well as to sell externally for corrugated manufacturers. The group's tissue manufacturing company Universal Paper Manufacturers (UPM) was established in 2008 and it manufactures 100% virgin tissue





By Tissue World magazine editor Helen Morris

paper and produces a variety of one and two ply grades for bathroom tissue, household towel, serviettes and napkins.

Universal Paper has had to become more innovative and efficient as a result of deteriorating exchange rates, rising energy costs, changing consumer habits and a struggling economy. Its Consumer offering consists of leading premium brand Dinu; a range of serviettes, napkins, bathroom tissue, household towel and hankies, and the Diamond range of printed designer napkins. Its Professional division focuses on AfH products, which sells customised serviettes and napkins, bulk bathroom tissue and household towels, as well as hankies to the wholesale, hotel and hospitality industries.

With its many different flexographic printing machines the company has claimed a strong niche in the South African tissue market, making products that are both creative and hygienic. UPP currently converts over 1,000 tonnes of tissue products per month. Demand is increasing and the company has ambitions to grow further. To support the expansion, it is extremely challenging as a family owned business with no outside investors, to raise additional capital.

In the consumer sector, UPP's business extends to all of the major South African retailers such as Shoprite Checkers, Pick n Pay, Spar, Woolworths, Massmart, Clicks, and Food Lovers Market, to mention a few. Jonathan Sher says: "... with our in-



Members of the four generations of the Sher family from left to right: David, Barry and Jonathan

"Although we are fully FSC-certified, only one of our main customers have requested this. The average South African consumer is left to battle his conscious when deciding on environmentally-friendly products or pricing"

house graphics capabilities we have the capacity to focus on the aesthetics of the design of the print as well as the packaging. We are confident that our recent launch of the Décor Collection will create a high level of interest in the market. It's specifically targeted at younger people and is well priced. We have created a niche that our competitors cannot compete with due to our printing capabilities and expertise. Our aim is to offer the consumer a wider range of trendy



A fleet of trucks advertising the Dinu brand of tissue products

By Tissue World magazine editor Helen Morris



UPP currently converts over 1,000 tonnes of tissue products per month. Demand is increasing and the company has ambitions to grow further

products. We also understand the importance of hygiene with respect to our product offering. In this light, we recognised that we needed to reassure consumers and as a result we have had our product dermatologically tested. Further to this, we have had our household towels food grade certified by the German certification body ISEGA."

With respect to the AfH market, David Sher adds: "We are focusing more on the AfH sector as consumer sales have become very challenging with margins being eroded due to increasing input costs and a weak economy."

"We are exporting some products to neighbouring countries and in the near future will look to increase our market share in these regions, however long distance transportation is not profitable because of the poor value to bulk constraints when selling tissue. Consequently, further into Africa is not likely at this point in time", he adds.

When asked about the environmental considerations Jonathan Sher adds: "Although we are fully FSC-certified, only one of our main customers have requested this. The average South African consumer is left to battle his conscious when deciding on

environmentally friendly products or pricing. The weakening South African economy is changing buying habits where smaller weekly purchases are replacing larger monthly spends. The smaller quantities show the financial constraints and conservatism of the local consumer."

David Sher adds: "This family business has a lot to be proud of! 65 years of heritage, a self-generated niche in the South African market and ambitious plans to keep on growing. The future looks very bright with a unique high performance culture, driven by experienced and loyal staff that are embraced in a family environment."



Novus Holdings backs debut in tissue with €25m boost to capacity

With the global print and paper market showing signs of global decline, one major player has moved into tissue with an investment project at newly acquired Correll Tissue. TWM reports.

'm attracted to the thrill of doing something new," Correll Tissue's managing director Aaron Ganesh tells TWM from the company's plant in Phoenix Industrial Park, just north of the port city Durban in KwaZulu-Natal. "Our parent company, Novus Holdings has been in print for more than 25 years and now was the time to diversify."

Novus Holdings (previously Paarl Media Group) moved into tissue with the acquisition of Correll Tissue on 1 June 2014. The group is a leader in South Africa's printing and manufacturing sector, operating twelve specialised printing plants and the one tissue plant.

The acquisition allowed the group to expand its manufacturing operations in the paper industry by taking advantage of the potential of waste paper – currently produced by its printing operations – in the production of tissue paper. Jandré de Milander, Novus Holdings group executive, labels and tissue, says the group is excited about the future possibilities of the tissue manufacturing facility.

Established in 2000, Correll Tissue reinvented itself in 2012 when it installed a de-inking and hot disperger unit. This resulted in the company being one of the few independent mills in South Africa to generate a competitive product range for the upper end of the market.

Walking around the plant, this is the second time TWM and Ganesh have met, and he is once again friendly, informed, and obviously very eager about the plant's expansion plans. The plant targets consumers that are looking for branded products that have consistent quality and are available at competitive market prices, which Ganesh adds is its competitive edge.

PM1 has been running for 10 years and produces 10,000tpy of two-ply and one-ply virgin toilet rolls, single ply recycled toilet rolls, kitchen towels, serviettes, garage wipes and jumbo tissue wadding. Some 30-40% is for private label products and Correll Tissue is looking to increase its presence further in this market.





Novus Holdings (previously Paarl Media Group) moved into tissue with the acquisition of Correll Tissue on 1 June 2014

By Tissue World magazine editor Helen Morris

The company is in the middle of a €25m investment project that will see it almost triple its production capacity. A new paper machine will be installed alongside the existing one and a converting line is also scheduled to start-up, both by March 2016, producing an extra 18,000tpy. "We currently have 5% of the local market and hope to achieve 10% after the expansion," he adds.

AfH isn't a big market for the company at the moment and the business stays close to the retailers. Ganesh adds: "We are seeing that the demand for two-ply products is growing, which is driven by consumer aspirations. In fact, the whole market for tissue is growing here in South Africa."

Route to market also consists of corner shops in townships: "Tissue is becoming more and more accessible to everyone here. However, some of it is unregulated and we would rather work with the retailers where it's 100% regulated."

Ganesh keeps an eye on the Turkish market where he says there are several similarities to the market in South Africa: "They're a very good model to look at especially because of their geography where they have access to Eastern Europe and the Middle East, both of which are very interesting markets for tissue."



"Tissue is becoming more and more accessible to everyone here in South Africa." Correll Tissue's managing director Aaron Ganesh

"We currently have 5% of the local market and hope to achieve 10% after the expansion"

> Correll Tissue's managing director Aaron Ganesh

In terms of export, the company supplies jumbo rolls to some of the 15 members of the SADC countries. "There are opportunities to export further; it's just down to the cost of transportation which would be too much for us if we look as far as North Africa."

While the local economy is wobbly, South Africa is still seeing its tissue market and retailers perform well. "Since 2008 we have recorded growth locally, but the recession has hit South Africa hard. It's growing under 2% per annum and so it's still a problem that we are constrained by



PM1 produces 10,000tpy of two-ply and one-ply virgin toilet rolls, single ply recycled toilet rolls, kitchen towels, serviettes, garage wipes and jumbo tissue wadding

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the low growth, it has been a difficult trading environment."

The challenge remains to increase employment as well as the formal economy: "South Africa is still a growing country and seeing lots of regeneration,' Ganesh says. "We also need more tourists - the recent visa changes have impacted the tourist industry which the country cannot afford."

That the tissue market is still growing 8-10% under this environment says a lot. "There are few commodities that are growing and tissue is one of them," he adds. "Our business strategy in this climate is to continue to deliver exceptional quality branded products in cost-effective formats for the growing South African consumer market"

Correll Tissue factfile

Quality branded tissue products:

- One- and two-ply toilet rolls One-ply recycled toilet rolls Kitchen towels

- Jumbo tissue wadding

Brands:

- Correll Royal a two-ply product available in packs of 9
- Correll Single ply available in packs of 10 and 20
 Private label products

Current paper machine:

- 2.6m wide paper machine Capacity 30-35 tonnes per day Speed 650m per minute

New paper machine:

- 2.7m wide paper machine Capacity 45-50 tonnes per day Speed 900m per minute



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Sugar cane and able

The primary fibre source which supplies Sappi at its Stanger site on South Africa's east coast is much in evidence. TWM visited the pulp giant's single tissue producing mill.

riving from Durban through KwaZulu-Natal to Sappi's Stanger site, it's evident just how readily the supply of bagasse—the fibre used to produce the plant's 28,000tpy of wadding—actually is. Field after field of the tall and leafy sugar canes are swaying in the sea air as it sweeps in off the Indian Ocean.

The pulp and paper giant is unique in the country with its use of sugar cane fibre as its primary fibre source, and the plant is in plentiful supply in the coastal South African province. The product is sold as Triple Green Tissue based on the manufacturing pillars. Despite that, tissue still makes up a very small percentage of Sappi's production and it is the company's only tissue producing site.

Currently Stanger produces wadding that is turned into one and two ply tissue, serviettes and industrial wipes in a grammage range of 17 to 34g/m. It is sold to independent tissue converters as well as larger companies that have converting operations but require additional wadding versus what their own operations supply.

General manager Beverley Sukhdeo tells TWM that at this stage the business has no plans for significant diversification within the tissue sector.



General manager Beverley Sukhdeo

"We are seeing growth in the South African tissue market, around 3-4% as a whole and as the middle class continues to grow this is likely to continue," she says. "Definitely the middle class here all use tissue products, but South Africa is still struggling with large segments of poverty in all the regions. Many people living in townships are not able to afford tissue products. As the middle class continues to grow the main growth area will be in one ply toilet tissue."



Demand for the site's tissue products is all local, and the business exports only small volumes. Sukhdeo adds that while the site continues to look at opportunities for expansion, at this stage no firm commitments are in place to invest further in the tissue production facilities.

Demand for green products is "coming from amongst the higher income earners," but she says that this is only a small portion of the market.

However, Sukhdeo says there is potential for both larger and smaller players to expand their respective tissue offerings.



Sappi's Stanger site is surrounded by its primary fibre source in KwaZulu-Natal

"We are seeing growth in the South African tissue market, around 3-4% as a whole and as the middle class continues to grow this is likely to continue."

General manager Beverley Sukhdeo

PIX Pulp indices 22.9.2015

NBSK pulp Europe

n spite of the narrowing price gap to hardwood and the ensuing support on softwood pulp demand, the BSKP market fundamentals remain shaky. Market weaknesses are a combination of demand softness which persisted at least still in July, and of a sneaking up of the supply with additional market pulp volumes being gradually released from the earlier integrated use. The earthquake in Chile jolted the market for a day or two but no cuts in supply have been published. A labour action at Arauco's Alto Parana mill kept the SBSKP and fluff pulp mill down for a week and the stoppage of the Finnish pulp and paper mills on Friday, 18 September meant another supply loss.

About 25,000 tonnes of market pulp supply was lost in September in these two events combined. The fall of our PIX NBSK index value in dollars came to a halt, at least for the second week in September, as the benchmark value moved up by 18 US cents, or by 0.02%, and closed at 838.35 USD/tonne. The US dollar weakened against the Euro by 1.2% (weekly average). Due to the weakening of the US dollar against the Euro, the benchmark value in Euro, converted from the dollar index, fell by 8.91 Euro, or by 1.19%, and the PIX NBSK index value in Euro-terms ended at 740.79 EUR/tonne.

BHK pulp Europe

With most of Rizhao's capacity back in operation and with production volumes still moving up from the new mills in Brazil and Uruguay, the supply of BHKP is rising at a similar pace to that seen in the demand. Some tonnage has, however, been lost in September, in a small way in Finland due to the labour action and, more importantly, through the maintenance downtime taken, as usual at this time of the year, in Brazil.

Compared to the first half of the year, hardwood pulp volumes are more readily available from the spot market. This seems to have led to a pause, at least temporarily, in the long string of price increases in this grade. On the other hand, a good demand pull continues from the tissue producers and hardwood pulp market remains relatively firmer than the softwood side.

This applies also to the European demand, although the falling demand and production of graphic papers have reduced the demand also for BHKP. Our BHKP benchmark in Europe headed this time very modestly downwards, by 10 US cents/tonne, or by 0.01%, and closed at 809.37 USD/tonne. In the previous week, the value of Euro appreciated by as much as 1.2% against the US dollar (weekly average). When converting the USD-value into the stronger Euro, the PIX BHKP index in Euro headed down by 8.85 Euro, or by 1.22%, and closed at 715.18 EUR/tonne.



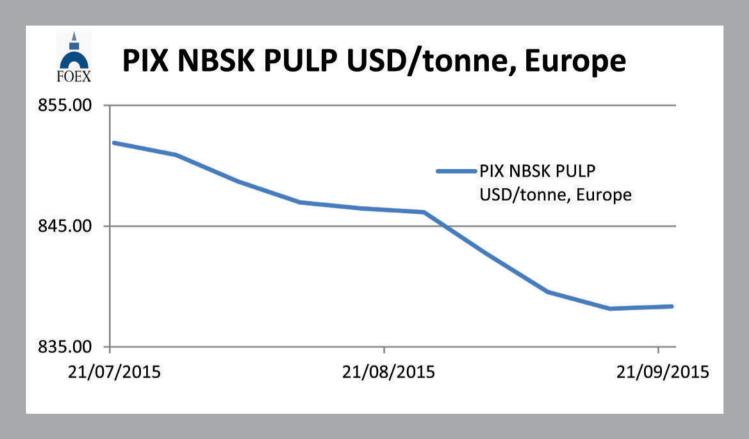
Paper industry

The first August data over the paper industry performance and the other recent market news give a mixed picture. The US box data was disappointing as the box volumes were up by only 0.5% from a year ago and inventories moved up by 66,000 tonnes. In containerboards, the US production was up by 3% from a year ago and operating rate remained above 96%. But, the production capacity risks rising more than 3% over the next 12-15 months. The decline in US uncoated free sheet shipments, by 0.5%, was less than the cumulative performance over the first eight months.

In Europe, the only statistics so far available are buyers consumption and inventory data for softwood pulp. Those statistics show softwood pulp buyers' consumption down from last year, but only by 0.9%, which suggests that paper production (and consumption?) are down less from 2014 than the cumulative decline. The reports from the market support this view

In several graphic paper grades, the seasonal decline appears to have been somewhat softer than on average. This has helped the paper producers to get some traction on their price increase initiatives as also seen from our paper price index data with all the benchmark values up at this time. While this is partially driven by the modest weakening of the Euro against the basket of non-EMU currencies, the rise of most of the indices included also at least partial acceptance of the price hikes from the July/early August price negotiations. Prices have crept up also in the containerboard sector. In other packaging grades, not followed by our indices, prices are up in some of the kraft papers and at least one producer is out with price announcements in folding boxboard from 1 November

Source: FOEX Indexes



registered PIX price indices for certain pulp, paper packaging board, recovered paper and wood based bioenergy/biomass grades. The PIX price indices serve the market in a number of ways. They function as independent market reference prices, showing the price trend of the products in question. FOEX sells the right to banks and financial institutions to use the PIX indices for commercial purposes, while RISI Inc. has the exclusive re-selling rights for subscriptions to the PIX data and market information. Please enquire for subscriptions at foexsubs@risi.com or via the following link www.foex.fi/subscribe/

Tissue papers are produced either from virgin fibre, recovered fibre and various mixes of both, depending on the end product. High quality hygiene tissue products like medical tissue products, facial tissues, table napkins or other such household and sanitary products are often made exclusively or almost exclusively from virgin fibre pulp, whereas the share of recovered fibre typically increases in tissue products for a variety of end uses outside personal hygiene, such as kitchen towels or towels for garages or other such industrial production facilities etc. Providing PIX pulp price indices gives the paper producer and buyer insight in the price trends with a weekly frequency. PIX indices are used as market reference prices e.g.

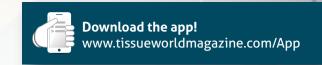
- by banks or exchanges that offer price risk management services for pulp buyers and sellers
- by buyers and sellers of pulp or paper in their normal supply contracts
- companies who want to employ an independent market reference price for internal pricing (e.g. pulp mill — paper/paperboard mill, paperboard mill — box plant) through licensing the commercial use from

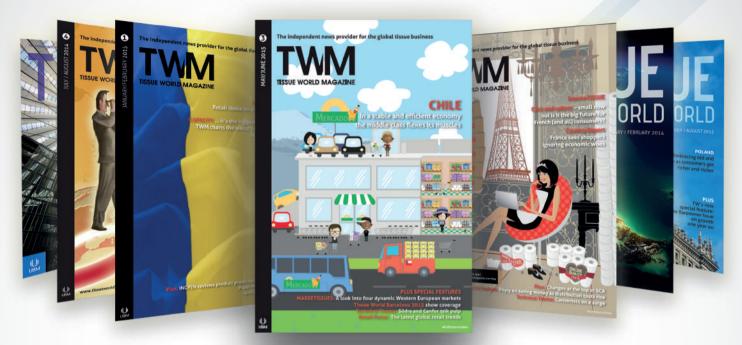
In addition, our price indices are widely used in financia analysis, market research and other such needs by alkinds of parties linked directly or indirectly to forest product or wood-based bio-energy industries.

This way the companies have better tools to budget their cost or income structure and profitability, and may concentrate on their core businesses with less time spent on price negotiations, which tend to increase in these days as the planning span narrows in the wake of the short, quarterly business cycles and, nowadays, in most cases, monthly raw material pricina decisions.

Subscription - For access to the latest PIX Pulp and Paper index values and commentary, please subscribe to the "PIX Pulp and Paper Service" via the following link www. foex.fi/subscribe/







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Join the conversation







Whether at home or abroad, when buying tissue products I look for a balance of quality and price

Charlotte Lynn is a teacher from Canada working in the UK



love travelling and have been to many parts of the world and also lived in a couple of different countries: my native Canada, and I've spent a couple of years teaching in South Korea and also in London. My experiences for buying products in these countries have varied but what I like to buy doesn't change that much. I know what I'm looking for and it all comes down to the right balance of quality and price.

Regardless of where I am I use toilet paper, home tissue and purse tissue. When it comes to toilet paper I like three ply or something that looks like it will be soft and luxurious. The brand isn't important but I believe I'm influenced by the packaging, I like an interesting design and it does sway my buying decision. When making my purchase, I always compare all the options on the shelf of the grocery store and choose the one that has the balance of quality and price.

"The brand isn't important but I believe I'm influenced by the packaging, I like an interesting design and it does sway my buying decision. When making my purchase, I always compare all the options on the shelf of the grocery store and choose the one that has the balance of quality and price."

I choose toilet roll that is middle-of-the-road, not the cheapest and not the most expensive, or in other words not the poorest quality and not usually the best. I usually buy a package of eight-16 rolls at a time.

As for tissues at home, I never buy the man size as I find them too large. I like both medium sized and large boxes but I prefer the box to have more in it as I use a lot of it, and I also think that's better value for money. Again, like the toilet paper, I don't like the cheapest ones that much but will buy boxes of those occasionally to use in between using the higher quality stuff. I do like the menthol or eucalyptus scented ones when I'm feeling under the weather.

I always have the small purse/pocket sized tissue packs on hand as well but I rarely buy these individually as it's not that cost effective. I usually purchase them from the grocery or pound store where I can get a volume discount on them. The most important things are price and quality although I would like to purchase environmental products if they were reasonably priced and comfortable.

However, generally when I think of environmentally friendly products, I have a sense that they are poorer quality and more expensive.

When I travel I'm usually less fussy about my tissue purchases as I don't usually have time to go to the mega stores where I know I can get a better selection and better value-for-money. When I'm on the road, quality and price isn't always as key, it's more about convenience so I usually will purchase the items that are the simplest to find.

Special Feature: Annual Review 2015

As 2015 draws to a close, TWM asks leading figures across tissue's global supply chain for their retrospectives on 2015... and predictions for 2016

Sumit Khanna

Chief executive of tissue manufacturer Beeta Machines PVT, India

TWM/1 How have the events in the tissue industry in the past year impacted your business and the global tissue industry?

Khanna: "In the past year there have been a few key events that have happening in India, for example mill acquisitions, mill consolidation and also growth in export. The impact on my business isn't substantial apart from the price of jumbo reels which has been affected.

"We have definitely also seen more converters and papermakers that have started exporting into India."

TWM/2 What main tissue trends are you expecting to see in 2016/2017?

Khanna: "With the introduction of the goods and service tax (GST) in India by April 2016, I predict that there will be lots of growth throughout the tissue paper industry.

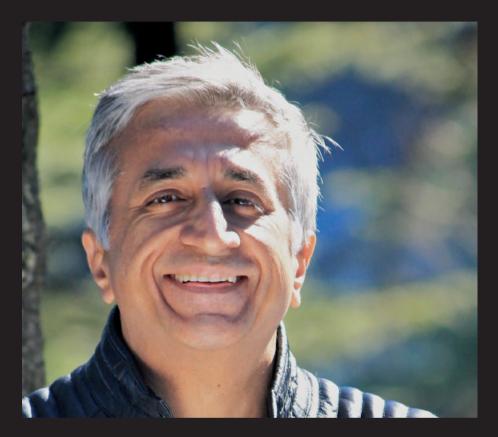
"I also foresee growth in the private label business as the trend of supermarkets is increasing very quickly.

"With the Indian rupee depreciating more than 10% in the last year, the rise in exports is inevitable.

"Additionally, and much to my surprise, lots of paper mills have started making recycled paper; this is a big trend that we're seeing here."

TWM/3 How are the shifting economic conditions around the world impacting your business and the tissue industry at large?

Khanna: "There has been some impact in India with lots of finished goods such as paper napkins (usually coloured in three ply and also four ply and air-laid paper) imported here. We also have the brand "Selpak" from Turkey here in India, and Asia Pulp and



Paper (APP) has also started producing finished goods in India. SCA has also started their production too.

"At large, these international players are increasing the market size of the Indian tissue market."

TWM/4 Are you seeing demand for tissue products in new geographical areas, and if so, where?

"With players like Kimberly-Clark, SCA and APP coming into the Indian tissue market, this is creating a big threat and challenge for all Indian converters. However, it is also an excellent opportunity for the paper makers in the immediate future."

Sumit Khanna

Khanna: "Yes, I see a lot of demand increasing in rural areas in India. We are seeing this mainly because of an increase in income and the international exposure onto India people of the use of tissue products around the home."

TWM/5 What are the main challenges and opportunities facing the tissue market in the immediate future and how are you tackling them?

Khanna: "With players like Kimberly-Clark, SCA, APP coming into the Indian tissue market, this is creating a big threat and challenge for all Indian converters. However, it is also an excellent opportunity for the paper makers in the immediate future.

"What we need to see now is the converters in India upgrading their machines and installing more capacities in order to survive against the new competition."



David Mackinson
Senior research analyst at Euromonitor
International, South America

TWM/1 Machinson: N.A.

TWM/2 Mackinson: "CMPC continues to promote the ATMOS/structured paper used in its kitchen towels (Nova Evolution). The value-added products are marketed as being more resistant and more absorbent.

"We can expect to see two ply toilet paper to continue to grow throughout the region. The product is competitively priced compared to one ply and so the migration has been attractive to consumers. There is also a manufacturer driven trend towards bigger rolls, 40m instead of 20.

"We can expect manufacturers to continue to innovate. Value-added products continue to be the driving force behind the growth in value terms. Latinos are curious consumers, and the underlying trends of urban life (fast-paced, both men and women in the workforce, women with higher disposable incomes, etc) are natural factors in the growing demand for more high quality, time-saving products."

TWM/3 Mackinson: "The South American retail tissue industry continues to see positive growth rates, although it operates in an increasingly more complicated business environment. Two of its largest markets, Brazil and Venezuela, are each in the midst of recession, while previous highfliers Peru, Chile, and Colombia

are each dealing with a significant de-acceleration: growth that is well belong the +5% that they are used to. This economic background is significant as the Latin middle class and their increasing disposable incomes have been responsible for growth in both value and volume terms over the last decade.

"This constant growth resulted in a migration to the modern grocery channel as well as fondness for name brands. However, this has resulted in a market with unit prices for tissue products that are in-line or above those of more developed markets. Additionally, private labels have a low penetration rate in South America (below 10% on average in value terms) compared to Europe (+50%). There is a real opportunity for a private label brand, with a comparable quality, and a more economic price, to take significant market share from the name brands.

"Manufacturers will thus have to look for more organic models for growth in 2016. The principle players will also have to be aware of the potential that private labels have."

"Regarding the competitive environment, in Chile, the arrival of Papelera Concepción (FPC) is expected to make waves in 2016, although at a marginal level.

"Regarding Venezuela - a market that has been seriously impacted by government price controls and an unattractive business environment - production (and thus sales) of tissues (boxed and pocket) in 2015 are approaching nil as domestic producers have been forced to deal with the chronic shortages in toilet

paper in the formal modern channel. The black market has resulted in consumer stockpiling."

TWM/4 Mackinson: "We are seeing more demand from Bolivia, one of the country's with the lowest per-capita consumption continues to see positive growth in tissue products, albeit from a marginal base.

"Second-tier cities in countries such as Peru and Colombia will also continue to support growth in volume terms."

TWM/5 Mackinson: "The main challenges: a spike in unemployment in Brazil will force consumers to trade down, the death of the tissue (boxed and pocket) market in Venezuela, fixed prices in Venezuela, the black market in Venezuela, the growth of discounters across the region will be a challenge for name brands, growth in value terms in times of economic uncertainty, growth in volume terms when income growth stalls

"The main opportunities: private labels, an improved political and business environment in Argentina (presidential elections pending at the time of print)."

lan Padley
Tissue applications manager, BTG
Group

TWM/1 Padley: "Globally, we see that tissue has had a good year of solid production growth and a high level of new projects announced across all geographies. This is reflected businesswise for BTG by tissue continuing to be the fastest growing business segment."

TWM/2 Padley: "We are seeing numerous key trends going into 2016. Commercially, we still see specialist private label producers strengthening their position in North America, while in Europe, we've seen many producers emphasising their branded offering with investment in both manufacturing assets and promotion. "The cost of fibre continues to be a worrying variable for producers so for example the local currency position in Latin America has increased emphasis on generating more bulk



"We have seen established producers of pulp and other paper grades turning to tissue in all geographies, either converting assets or building new ones to utilise existing pulp capacity."

Ian Padley

from less fibre, a trend repeated in many geographies.

"We also see the continuing development of alternative fibre sourcing, especially bamboo and bagasse and we expect this to continue.

"We have seen established producers of pulp and other paper grades turning to tissue in all geographies, either converting assets, or building new ones to utilise existing pulp capacity. The recent announcement by Portucel is typical in this respect, but even on a small scale, we see projects like the highly successful UK Fourstones operation, converting old MG machines to tissue.

"The other major trend is faster, newer, better technology, forcing out the older assets."

TWM/3 Padley: "In terms of the changing economies, in the Americas (Brazil and Mexico are the two largest markets outside of US and Canada), the currency devaluation has made the introduction and acceptance of new value based technology difficult. "In China there is the background concern of a temporary overcapacity, exacerbated by the current slowdown

in growth, although this has been less impactful on the established producers.

"Obviously the macro-economic situation, especially with respect to a continued China slowdown, or various Eurozone scenarios is a big concern. A repeat of 2007/8 might not impact consumer tissue overall consumption but might as in 2007/8 significantly impact the AfH HoReCa sector as business and tourist travel and entertainment driven tissue consumption reduces."

TWM/4 Padley: "Absolutely we're seeing demand for tissue products in new geographical areas, primarily in emerging markets and especially in Latin America - we see more and better quality products every time we visit.

"Also in ASPAC, product innovation seems to be a constant theme when we meet customers."

TWM/5 Padley: "The rapid loss of experience from our customers and a relatively small group of tissue experts in the market challenges suppliers to add resources. Many tissue makers have had their most experienced people retire in the last few years and there has not really been a good replacement/training policy in place for some years before that, and yet the technical complexity of making tissue has not decreased!

"The good news is the Paper Science and Engineering programmes have recently been increasing the number of students and are producing top level graduates. The opportunity we are seeing is for agile industry partners to build enhanced tissue making competence in their teams, something BTG is actively and globally committed to do. As well as direct recruitment of more experienced engineers, we do find that the intern model works very well for us, and we have built up some key resources in this way.

"One technical issue is that of asset protection against a background of faster and bigger machines making quality grades, sometimes on integrated or slush pulp. This presents engineers with some new challenges to ensure Yankee reliability and thus you see this as a theme of many a conference paper and within many companies, including BTG."



Thierry Trudel, vice president of marketing and communications, Cascades Tissue Group

TWM/1 Trudel: "The global tissue market seems to be strong; Europe has renewed strength and coupled with continued growth in North America, there appears to be a stronger and more unified message being voiced related to the importance of hygiene. The European Tissue Symposium's sponsored research developing consensus statements around the science of hand hygiene and hand drying is an important example of this. Similar investigations are underway in North America to empirically understand and educate the market.'

TWM/2 Trudel: "As science builds on the hygienic benefits of products like paper towels and the impact it has on reducing absenteeism from work, school and other areas, I expect to see even more increased customer interest and the availability of more market products centred on hygiene solutions. This could include the emergence of more, diversified hygiene stations and the normalising of touch-free dispensers in restrooms, or perhaps the development of smaller sanitation kits for employees to keep at their desk during cold and flu season to remind people of the constant threat of contamination.

"I think we're also seeing increased interest in premium, recycled material goods. Cascades was the first North American tissue manufacturer to offer

high quality products manufactured using Voith's ATMOS paper machines beginning in 2010, and it's been reported that other major tissue players have letters of intent as well. That shows that consumers approve of the quality of premium tissue products manufactured sustainably without reliance on virgin fibre."

TWM/3 Trudel: "Recycled fibre costs have been relatively stable, which we think will drive increased use, familiarity and continued demand for the paper products Cascades Tissue Group manufactures from secondary fibre. "Additionally, the weakening of the Canadian dollar over the past year versus the U.S. dollar results in a positive impact to our business as we expand throughout the United States."

TWM/4 Trudel: "Demand strong across the continent."

TWM/5 Trudel: "In terms of challenges, the mergers on the distribution and manufacturing sides are both having an impact on the industry. Cutting through the clutter with a familiar message supported by strong and consistent support is especially important now.

"From an opportunities standpoint, the importance of equipping people to understand hygiene and stay more healthy cannot be overstated. It's an issue that affects nearly all of a commercial organisation's stakeholders, yet hand hygiene efficacy rates in particular continue to be lower than they ought to be. This year we've rolled out a number of new touchless dispensers that are compatible with our differentiating antibacterial paper product innovation. We'll continue to be pushing the boundaries of ways our products can make the world a healthier place."

"We are optimistic as tissue products seem to be relatively robust with regards to economic fluctuations."

Silvia Kerwin



Silvia Kerwin, head of corporate communications, WEPA Group

TWM/1 Kerwin: "Fortunately, the European tissue industry is among the less recession-prone industries. However the price increases for raw materials and energy could not or only partially be passed down. This adversely affects the already unsatisfactory margins. Furthermore, the commercial power of European food retailers is rising steadily by increasing purchasing volumes. Tissue producers only have the chance to perform successfully in this area of conflict by higher efficiencies and more flexibility in production."

TWM/2 Kerwin: "On the raw material side we will have to face two challenges in Europe. On the one hand this is the shortage of recovered paper grades usable for tissue production caused by further decline in the area of graphic papers. On the other hand we have the exchange rate risk €/\$ in the pulp sector that causes always an unpredictable risk of rising prices.

"On the product side, we expect a strengthening of the trend towards higher-quality papers, especially in Eastern Europe due to the improvement of general living standards.

"In Europe, private labels will continue to grow, because the qualities are continuously improved on an already high level. Simultaneously we see the growing demand of customised products and concepts to be met by tissue suppliers."

TWM/3 Kerwin: "In Europe there is still a North-South divide. The loss of purchasing power from the 2009 economic crisis could be compensated only partially in the southern European countries. Here the consumer turns mainly to the basic qualities in the entry-level price segment. In principle, however, we are optimistic, as tissue products seem to be relatively robust with regards to economic fluctuations."

TWM/4 Kerwin: "We are convinced that the demand for tissue products in Europe will generally grow in the next few years. Reasons for this are the rising living standards, urbanisation and especially the growing hygiene awareness among consumers. This growth is generated disproportionately in Eastern Europe and in the Away-from-Home sector."

TWM/5 Kerwin: "Predictable prices and availability of raw materials can be partially achieved by a foresighted planning and long-term contracts with suppliers. In order to further invest in efficiency and flexibility in the capital-intensive paper sector, it is also important to ensure delivery volumes and income. We achieve this by good customer relations, a high service level and customer-specific, innovative products.

"Another main sector will be the energy situation. We especially pay attention to the topic of energy efficiency in continuous improvement and special projects. Here we still see potential for savings that we can generate in cooperation with the machine suppliers."

Marcus Hellberg Head of marketing and business support, Södra

TWM/1 Hellberg: "The relevant development for us is the rise in demand for softwood pulp, which we were early to spot as a global phenomenon and then the first to react to when we announced our capacity expansion plans in Sweden at our Värö and Mörrum mills, which come on stream in the middle of 2016. "Tissue is responsible for much of this demand increase, which will call for a new softwood mill every year for the



foreseeable future. There will be some initial overcapacity following the first wave of investment, investments soon be required to keep pace with demand, so it's a strong position for softwood suppliers. Responsible sustainable forest management means we will have the fibre available to meet the future needs of our mills."

TWM/2 Hellberg: "Product developments will continue to focus on softness and bulk, but tissue makers' pulp requirements could well evolve in the new few years and we have a couple of projects with customers where we are looking at this."

TWM/3 Hellberg: "Improving living standards in the developing world means greater tissue consumption and this means more pulp demand. As our customers develop their businesses globally, we will go with them."

TWM/4 Hellberg: "We have always kept a close eye on developing markets in Eastern Europe, but we are now active in the region as a supplier. This is an important development for Södra. "As for Asia, we have been present in the market for a long time but our investments, particularly in ECE pulp

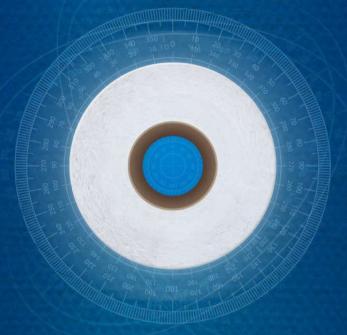
in the market for a long time but our investments, particularly in ECF pulp, will give us a greater stake in Asian markets, particularly China."

TWM/5 Hellberg: "The growth in demand for softwood pulp from the tissue industry is our opportunity, and we have reacted with a major capacity expansion which will turn us into a global company.

"The challenge, for our customers as much for ourselves, is to be nimble enough to track consumption patterns for tissue in developing countries. We should not assume that the history of consumption growth in the economically mature nations is a template for those entering growth phases now."

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Preferred Packaging: Geos and Star Evo Packaging machines

TWM's Packaging Technical Theme takes an in-brief look at DM Pack – Preferred Packaging's most recent innovations to launch into the market place. A TWM report.

referred Packaging's owner Luca De Marchi says the company's packaging line – the Star Evo Packaging machine - is created and designed using the latest innovations. "The line is completely cantilever level, accessible, perfect for cleaning and maintenance," he says.

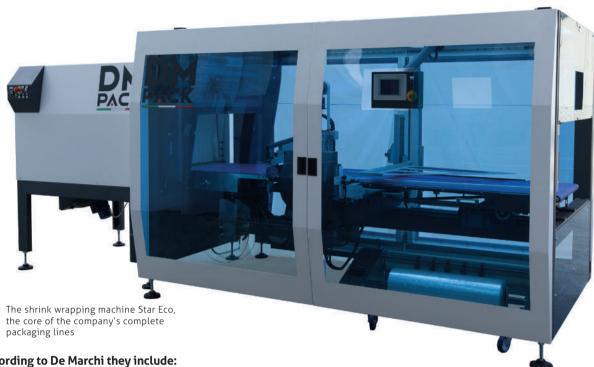
Its launch targets tissue companies that produce and convert paper and need packaging line turnkey options to produce industrial roll packaging for both shrink-wrapping of single

rolls and multipacks. The company also manufactures fully automatic case packers for industrial rolls and towels that are built with the same innovative design.

Its side and top load case packer machine Geos and its shrink wrapping machine Star Evo - the core of the company's complete packaging lines – both take full advantage of the company's latest research and innovations.



Technical Theme Packaging



According to De Marchi they include:

- A compact and ergonomic design: completely canter level, accessible, perfect for cleaning and maintenance, all machine parts are fully accessible by innovative sliding or opening guards. The film reel is located on a low position for easy film exchange and it is also available with COMBO tunnel. There is an electrical cabinet on top and on view for immediate diagnostic;
- A-class, ISO certificated components;
- Partly automatic change over by motor drives to another format. Manual change overs and all movements are done by Hiwin linear guides and scales for higher precision and longer life;
- Double operator position, thanks to moveable-rotating control panel and double openable doors as an option;
- Controlled by SIEMENS and operator panel, which allows intuitive machine operation easy and fast change format.

- Motor driven sealing bar instead of pneumatic sealing bar as an option to have machine all electronic no need of air.
- High film saving and energy saving thanks to three belts side sealing system with reduced distance between product and film. Tighter bag, less film consumption and less power required for shrinking.
- 8. Products runs always in the centre, not on the side, thanks to the innovative system of movable in feed and central belt for an easier change of format and better shrinking.
- 9. Flexibility: endless products length (no limit thanks to continuous side sealing system), products height up standard: 300mm, max product's width on STAR 500 MODEL: 420mm (wider machine's version for bigger products)
- 10. SPEED: shrink wrapping machine up to 120rolls/min.



EVT: Eye vision technology

EVT's innovative EyeVision software can be used in the packaging production of all general tissue products. Chief executive Michael Beising talks to TWM about its latest technical developments. A TWM report.

he EyeVision machine vision software can do all sorts of image processing," EVT Chief executive Michael Beising says. "Its use in packaging machines for the tissue industry is a key example."

He adds that the software's applications can be pattern matching, object counting, code reading (bar code, DMC, QR), measurement technology also 3D and IR inspections. In the current case, the inspection programme and the EyeVision hardware has been custom-made for use in packaging machines for feminine hygiene products and incontinence products. The napkins are ejected from the production machine and then inspected with an inline quality check for the correct alignment, the geometric contour and the thickness of the product.

Beising adds that concerning the alignment, it focuses especially on the angle of the product axis as well as the position and distance between the products. "The image processing system has to be able to detect panty liner, sanitary napkins and light incontinence products. The products are partly pre-packaged in individual packaging made from plastic or cellulose. The colour of the individual wrappings can range from transparent to black."

The process display at the production site showing incontinence products wrapped in transparent foil

He says that with the image process system from EVT, 3,000 sanitary napkins are inspected per minute. "The distance between the napkins amounts to 30% of the length of the product. The minimum size of the inspected product is 0.8mm in thickness, 60mm in length and 50mm in width. The maximum size of the inspected product is

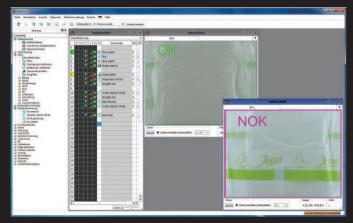


26mm thickness, 325mm in length and 200mm in width.

The packing machine adopts a PLC programmable controller for operation. The parameters for the packaging size can be configured in the EyeVision software by switching between the already created inspection programmes or directly on a screen display. So the parameters can be changed easily and quickly."

As it is a high-speed application several factors have to be considered, when selecting the camera: image resolution, sensor design, exposure time and interface. "A common error is to select a camera with higher image resolution than is required by the application. In using a region-of-interest in the camera the transmitted and processed data can be reduced, which makes the application faster," Beising says.

In the current case the application had to be high-speed and therefore features short exposure time for the camera, fast data transfer between the camera and the image processor, high processing power and the simplest possible image processing programme.



A screenshot of the EyeVision software

Blox: the compact versatile cross-sector option

OCME has revolutionised the end-of-line concept with a compact and integrated solution that focuses all phases of packaging in a single block: Blox. Fabio Cavalchi, OCME sales engineering department project leader, talks to TWM. A TWM report.

lox is a fully customised packaging line, perfectly flexible, versatile and modular. It can adapted to suit many sectors: tissue, beverage, petrochemical, home and personal care and edible oil.

It was designed to meet recurring needs and growing demands that come from the consumer goods industries, including:

- Increase in efficiency: the overall efficiency of a line with the Blox system is greater than the sum of the efficiency of the individual units.
- Cost reduction: a single operator manages the entire end of the line thanks to a number of innovative features within the single machines and the whole system.
- Reduction of energy consumption by up to 36%, almost cancelling the need for compressed air.

- Space reduction: in a space of only 35x14 meters, a complete end of line, from the labeller to palletiser, thanks to Blox technology.
- Levels of flexibility without precedent: the format changes are automated and made quickly, for a wide range of bottles or containers, even hard to handle bottles with shaped forms and light materials.

Blox is designed to be a modular system so that it can be adapted to the needs of numerous industrial sectors. The various modules can include a labeller (or a sleever), a packaging machine (shrinkwrapper, tray former, wrap-around, pick & place, combi, etc.) and a palletising module that typically consists of a layer formation unit (manipulators) and one or more robots - or alternatively traditional palletisers.



Technical Theme T Packaging



The system is controlled by a single operator who is located in a central position with respect to the whole plant. Here the operator can monitor the status of each component and govern the operating parameters through a single interface.

Blox expresses the attention of OCME for the quality of the work environment and respect for the highest standards of safety.

Measures adopted for crucial points include:

- Ergonomics maximised thanks to:
- Shorter distances;
- Simplification of the label change;
- Automatic labels splicer;
- External and integrated reel holder, ergonomic and easy to reach:
- Integrated handle applicator, placed outside the machine;
- One operator panel;
- Eutomatic film splicer;
- · Maximum safety standards with CE compliance;
- Reduced noise thanks to the reduction of components and accumulation.

An important part of the Blox logic is the rationalisation of the product flow. This has led to the elimination of accumulation, with the benefit of reducing friction and contact between containers. This reduces the risk of damage to the product, even when running ultralight, fragile, delicate or unstable containers.

OCME's aim has always been to provide its clients with ever more efficient and flexible equipment. By this we mean the tools, technologies and professionalism to give us the leading edge in today's constantly moving competitive markets.

Each machine, each complete line, each activity undertaken by OCME represents the synthesis of a unique experience in the sector, as well as a way of working that focuses on the needs of the client.



Fabio Cavalchi, sales engineering department project leader, OCME

Free from its long dark history how high can resource rich Indonesia rise?

Once ranked 141st in terms of GDP, democratic Indonesia's leadership is aiming to become the world's sixth largest economy in the next decade. Academic Phillip Lawrence explains how the country achieved such stellar growth, and asks... are its targets reachable?

n the past Indonesia has been referred to as the "unlikely nation," clearly in recognition of the country's long dark colonial history under the Dutch brutally ending after the Second World War, followed by half a century of greedy military-backed dictatorship. Yet despite its history Indonesia is one of the world's most vibrate democracies at all levels of government.

So given that history it's not hard to imagine nothing being impossible for the world's third largest population: where exactly it heads will be very interesting for its - and the region's - tissue industry.

While the transition has been impressive, the real story has been over the last 15 years when the last dictatorial president, Suharto, resigned. At that time Indonesia was the 141st nation in terms of GDP. It became a founding member of ASEAN, the now ten nation body which aims to accelerate economic growth, social progress and sociocultural evolution among its members, protect regional peace and stability, and create opportunities for member countries to resolve differences peacefully.

It now ranks 26th and rising. The leadership is aiming for Indonesia to become the world's 6th largest economy in the next decade. The question is how has the country managed to achieve such stellar growth and are its aspirations achievable?

Indonesia has a number of things going for it, more than in the case of many other countries. Firstly, the population is generally quite young and growing. The size of the potential work force is therefore large and ready for work and also geographically dispersed so wherever any future economic hot spots occur there will be people able to do the work. Also, the nation is perhaps the most resource rich country on

earth with oil, coal, forestry and other minerals. Next, the nation straddles the equator in such a way that the majority of the world's shipping must pass close to Indonesia making the country perfect for international shipping trade.

Of course, all of these issues and features count for nothing if the political forces are not supportive of economic growth, national development and wealth sharing. This has been an area of massive change in the country and one set to continue. Before the new democracy period the economic wealth of the nation was openly channelled into the private pockets of the president, his family and his supporters. The new period has ushered in widespread policy changes that have decentralised the control over land, resources and people, and these are now starting to show results in a more appropriate distribution of wealth.

"Where exactly Indonesia heads will be very interesting for its - and the region's - tissue industry."

The pulp and paper industry sector is an example of the challenging period of changing political economy. Under leadership of President Suharto forest resources were exploited to reinforce the president's power base. Land was allocated to military cronies who were able to provide protection to Suharto's leadership. The military was being used to curtail any local protests against land clearing.

The result was massive tracts of natural forest land lost forever. The shift into democracy pushed the military out of the picture and the subsequent mess



in terms of land ownership, tenure and rights have been a decade long battle between local communities, local governments and companies. During the first few years of the new century and the beginnings of democracy, companies grew rapidly possibly exploiting the policy uncertainty with national resource management which perhaps further added to the environmental problems that have occurred in Indonesia.

Just recently the tide has appeared to have turned and progressively more appropriate and stronger policy measures have been developed by the new governments that have addressed the way the country's resources are to be used. It's not perfect yet, perhaps far from perfect, but it is a lot better than it was and is still getting better. We have to be aware that in 1999 Indonesia effectively had no government institutions at all, at any level. The currency was almost worthless, government and private debt that followed the Asian Financial Crisis was massive. It would be true to say that at that time Indonesia had few friends around the world.

Phillip Lawrence is doing PhD research on the Asian forestry, pulp and paper sector at Sydney University, Australia.

Events Calendar

Event	Date	Location	Website
Labelexpo Asia	December 1-4, 2015	Shanghai, China	www.labelexpo-asia.com
Tissue World New Orleans	March 14 - 17, 2016	New Orleans, USA	www.tissueworld.com/NewOrleans
CIDPEX 2016	April 11 - 13, 2016	Nanjing, China	www.cnhpia.org/en/conference.htm
Label Summit Latin America	April 26 - 27. 2016	Cartagena, Colombia	www.labelsummit.com/colombia
ISSA/INTERCLEAN Amsterdam	May 10 - 13, 2016	Amsterdam, Netherlands	www.issainterclean.com/
PaperCon 2016	May 15-18, 2016	Ohio,USA	www.papercon.org
Asian Paper 2016 Bangkok	June 1 - 3, 2016	Bangkok, Thailand	www.asianpapershow.com/
ISSA/INTERCLEAN Istanbul	September 7-9, 2016	Istanbul, Turkey	www.tissueworld.com/Istanbul
Labelexpo Americas	September 13 - 15, 2016	Chicago, USA	www.labelexpo-americas.com
Tissue World Istanbul	September 27-29, 2016	Istanbul, Turkey	www.tissueworld.com/Istanbul
Labelexpo India	November 17 - 20, 2016	Delhi NCR, India	www.labelexpo-india.com
Tissue World Shanghai	December 7-9, 2016	Shanghai, China	www.tissueworld.com/Shanghai
ISSA/INTERCLEAN Latin America	February 22-24, 2017	Mexico City, Mexico	www.issainterclean.com
Tissue World Milan	March 28 - 30, 2017	Milan, Italy	www.tissueworld.com/Milan
ISSA/INTERCLEAN CEE	April 26-28, 2017	Warsaw, Poland	www.issainterclean.com
Asian Paper 2017 Jakarta	May 17 - 19, 2017	Jakarta, Indonesia	www.asianpapershow.com
Tissue World São Paulo	June 7 - 9, 2017	São Paulo, Brazil	www.tissueworld.com/SaoPaulo



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	Page	Website		Page	Website
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Global Link	Inside back cove	r www.globallinksupply.com	Toscotec Spa	2	www.toscotec.com
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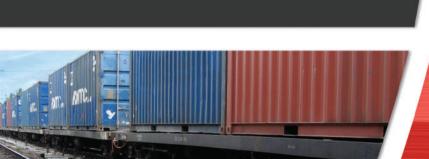
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