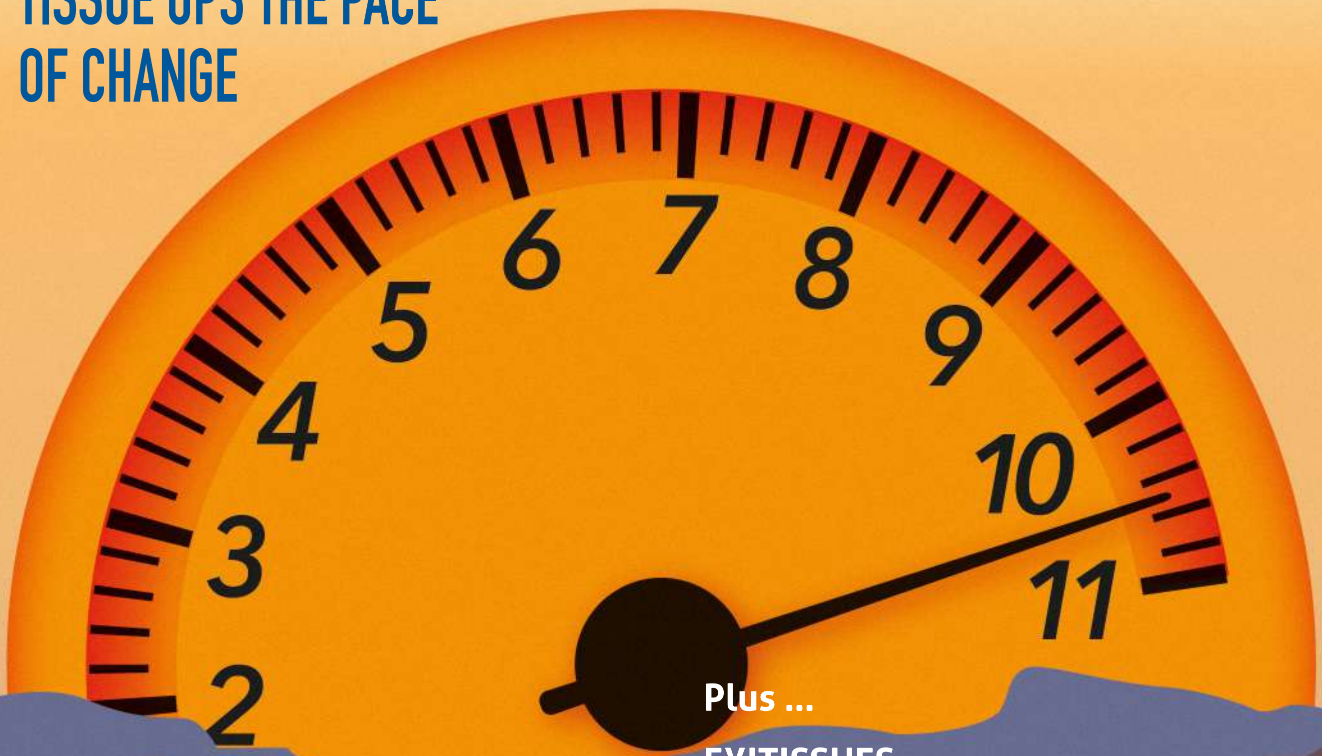
July/Aug 2020 | Issue #4

TWM
TISSUE WORLD MAGAZINE

The independent news provider for the global tissue business

PRESSING THE ACCELERATOR

TISSUE UPS THE PACE OF CHANGE



Plus ...

EXITISSUES
Recovered paper – urgent need for new sources

COUNTRY REPORT: SERBIA
Strong enough to survive decade of disruptions

WEBINAR
TWM launch edition draws global response

TECHNICAL THEME: CHEMICALS
Time is right for AfH innovation. Taking on dust and lint

FOCUS ON
Pandemic is the mother of invention

MARKETISSUES
Essity, K-C and GP on Covid-19

CONSUMERSPEAK
One-stop – bulk-buy – and always quality

informa markets

MCI (P) 141/03/2019

YOUR SINGLE SOURCE FOR TISSUE

Bath Tissue | Facial Tissue | Napkins | Kitchen Towel | Industrial Towel | Center Pull Towel | TAD Bath and Towel | NTT Bath and Towel | Carrier and Specialty Tissue | Airlaid | Nonwovens | and more

THE GLOBAL LEADER IN **TISSUE**

The Power of Leadership

Since 1976, Convermat has been the leading global supplier of parent rolls of tissue to more than 80 countries worldwide. Our unparalleled market intel and strong network of strategic alliances, resources, and insider knowledge can further grow and strengthen your business to achieve higher profits.

There When You Need Us

We consistently maintain capacity balance for many of the leading global tissue players. Our extensive network of global suppliers and customers enables us to deliver a continuous flow of tissue at the most competitive prices in any market condition and to any destination with speed, reliability, and integrity.

At Your Service

Our experienced team of seasoned professionals is equipped to handle all of your needs including inland and ocean transportation, import/export protocol, technical specifications, testing lab facilities, proprietary product development, foreign currency management, credit risk, and all relevant sales services.

More Than Tissue

In addition to our complete line of tissue, towel, napkins, and specialty paper we supply a comprehensive line of nonwoven substrates for medical, wipes, automotive, filtration, hygiene applications, and more.

convermat CORPORATION

www.convermat.com
T: 516.487.7100
F: 516.487.7170

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

In this issue...

▲ **Magnus Groth:**
"We had a strong performance in a challenging market," TWM interviews Magnus Groth, Essity president and chief executive

Page 4

Cover: The start of a new era when innovation will dramatically shape future performance. Image by Contrast Creative, Manchester, UK


FABIO PERINI
KÖRBER SOLUTIONS
nature is a perfect technology
our technology is perfect for nature
Our commitment is to provide innovative technological solutions to produce sustainable tissue products.
www.fabioperini.com
KÖRBER

EDITORIAL HEADQUARTERS
Informa Markets – Singapore
10 Kallang Avenue, #09-16 Aperia Tower 2, Singapore 339510
Tel: +65 6233 6688 Fax: +65 6233 6633

Deputy Event Director & Publisher
Agnes Gehot: *agnes.gehot@informa.com*

Senior Editor
Helen Morris: *helen.morris@informa.com*

Executive Director
Chris Kilbee: *chris.kilbee@informa.com*

CEO
Margaret Ma Connolly:
margaret.connolly@informa.com

ADVERTISING ENQUIRIES
Italy, Germany & North America
Silvio Arati
T: +39 02 4851 7853
sarati@studioarati.it

South and Central America
Selma Ugolini
T: +55(11)99904 5350
selma@gova.com.br

China, Hong Kong & Macau
Jennie Zhan
T: +86 20 86660158
info-china@informa.com

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

Please send address corrections to:
Informa Markets – Singapore.
10 Kallang Avenue, #09-16 Aperia Tower 2, Singapore 339510
Tel: +65 6233 6688 Fax: +65 6233 6633
info@tissueworld.com

Subscription online at
www.tissueworldmagazine.com

informa markets

WE ARE AT THE START OF A NEW ERA WHEN INNOVATION WILL DRAMATICALLY SHAPE FUTURE PERFORMANCE

Helen Morris
Senior Editor, Tissue World Magazine

Across TWM's online pages you will see the same thought expressed in a variety of ways. This pandemic – tragic in its still unfinished health and economic implications – has nevertheless forced a comprehensive re-assessment of working methods across all sectors.

In professional terms, a positive is that the crisis has given the tissue industry an "opportunity to accelerate changes", says Kim Underhill, Kimberly-Clark North America Group President. An enforced opportunity to advance innovations desired for a long time. Our last TWM highlighted the phenomenally rapid response to the early weeks of unprecedented panic demand for our products, which quickly became essential not just in practical terms but also more emotionally associated with security, comfort and hygiene.

In just three weeks in March, American consumers spent $1.4bn on bath tissue products alone. Those were the first off the shelves. For the UK's Leicester Tissue Company, sales and marketing director Frank Millward said: "It was very strange. My mobile was red hot with calls from the media and the press. It seemed like the whole world wanted to come and see the inside of a toilet roll factory! And almost every retailer in the land was looking for help."

That panic-buying is over, although there are reports of a return to stockpiling where the virus has returned. But to date trucks delivering tissue products are no longer being ambushed. Supplies are steady, the surge in demand is levelling off, the AfH dip is being released upward, and new opportunities – hand towels replacing air dryers for example – are being identified. Significant margin gains are on stream, and imaginations have been fired.

In this edition, industry leaders bring us up-to-date with how they see the early days of the new ... 'normal' hardly seems the right word. The new extraordinary.

Oday Abbosh, founder and chief executive of UK-based Better All Round and chairman of Consuma Paper Products, suggests the industry needs an approach different to a simply accelerated business-as-usual. Impressive agility and collaboration shown in the crisis points to a more fundamental issue – why so little innovation in normal times.

Established and profitable routines don't like major disruption. The pandemic has caused that. In this TWM, industry leaders tell you what they think.

Lockdown Analysis of the Week

Georgie-Pacific called on IRI panel data and US Census stats and its own calculations to help consumers understand how much product they would need. Staying home 24-7 meant a 40% increase on average daily use. You'll find the full facts in *MarketIssues.*

Webinar and online TWM

Tissue World Magazine's first ever live panel discussion webinar was shared by more than 500 industry personnel from tissue-linked companies across the globe.

A total of 858 had registered to share the industry intelligence on offer.

Four expert speakers discussed the future of the tissue business model, covering a wide range of topics including the unprecedented demand for tissue following the outbreak of Covid-19, cyber-security, BLM, home-working, and SKU simplification.

The format was designed to create focussed "chat show"-style sessions inviting anyone involved in the tissue making business to participate – from raw material suppliers, producers, converters, jumbo roll suppliers, all machinery suppliers, retailers and distributors.

There will be more live debates on the key topics important to you over the coming months, before the return of Tissue World trade shows.

A full report on the key points raised by the speakers is carried in this edition.

THE PHENOMENAL EFFORT TO PROVIDE THE PRODUCTS THE WORLD IS COUNTING ON FOR HEALTH AND WELLBEING

Tissue's leading executives chart the challenges and responses to the Covid-19 effects across the globe – Essity's president and chief executive Magnus Groth, Kimberly-Clark North America president Kim Underhill, and Georgia-Pacific's Consumer Products Group, senior vice president and general manager, tissue category, Vivek Joshi.

Magnus Groth
President and chief executive, Essity

In July, Essity reported its half year results stating increased market shares in many markets, increased online sales, but added that sales were negatively impacted by Covid-19 and related lockdowns. Year-on-year, net sales for the period decreased 1.0% to SEK62,119m. In the second quarter, net sales declined 11.4%. Yet the Covid-19 pandemic, it added, may lead to increased demand for its hygiene and health products as a result of increased awareness of the importance of hygiene and health.

TWM interviewed Magnus Groth, president and chief executive.

TWM/1: With the impact on Essity's results following the outbreak of the pandemic, what opportunities and increases in demand could you forecast for 2020 and 2021?

"To summarise the results of the second quarter, we had a strong performance in a challenging market. By strong performance I mean very good margins and strong overall operating profit.

"And the challenging environment very much impacted the top line, so sales that were down significantly, 9.3%, and the big impact was in Professional Hygiene, whereas Consumer Tissue did better.

"What is worthwhile to look at is the first and second quarter combined. If you take out the stocking effects we had in March, and now the de-stocking in the second quarter in many parts of the world. And then practically the opposite in China where there was a lockdown in the first quarter and then a re-fill of the supply chain in the second quarter, then you see it's not that volatile for Consumer Tissue, it's quite stable.

"This is because people continue to use Consumer Tissue at a slightly higher rate because it is to some extent replacing Professional Hygiene tissue and there's also an increased use of household towel because that's seen as more hygienic.

"But then of course the big negative impact overall that has made very, very clear in the second quarter was the impact to Professional Hygiene due to lockdowns. Specifically, if you look at Essity's product mix in Professional Hygiene, we have 39% of our Professional Hygiene sales from hotels, restaurants and catering in the HoReCa segments, which was very negatively impacted. And we have 26% of our sales from commercial building, offices and airports. In many parts of the world people are working from home and currently travelling less, which has also had a very negative impact.

"The third biggest sub-segment is public areas like schools that were also subject to lockdowns in many countries. So overall a big negative impact. And you can see that in the second quarter that Professional Hygiene declined 30%, whereas Consumer Tissue did better."

TWM/2: What impact have you seen in other geographical areas where Essity is present, including Vinda in Asia?

"We've seen similar trends globally. The big impact in the first quarter when China was in lockdown and then a slow recovery as China opened up. But then a negative impact in other parts of South East Asia like Indonesia and the Philippines that went into lockdown in the second quarter. So you can almost follow the pandemic to see the impact on our sales."

TWM/3: Do you see things opening up in Europe in terms of AfH?

"We saw a slight improvement in June but this will take time. People are still hesitant to go out and eat, and a lot of people are still working from home. It will take several quarters before it's all normalised."

TWM/4: How have you adapted to the supply chain challenges the pandemic presented?

"In February, we learned from our business in Asia, Vinda, that this was going to be serious and a real pandemic. We took a lot of their advice to quickly implement a lot of big changes in the supply chain to protect the business.

"We have three overarching principals during the pandemic – care for our people, secure business success, and contribute to society. If our employees feel safe, they will want to come to work. We have done big changes inside our plants, for example sectioning

"IF YOU LOOK AT ESSITY'S PRODUCT MIX IN PROFESSIONAL HYGIENE, WE HAVE 39% OF OUR PROFESSIONAL HYGIENE SALES FROM HOTELS, RESTAURANTS AND CATERING IN THE HORECA SEGMENTS, WHICH WAS VERY NEGATIVELY IMPACTED. AND WE HAVE 26% OF OUR SALES FROM COMMERCIAL BUILDING, OFFICES AND AIRPORTS. IN MANY PARTS OF THE WORLD PEOPLE ARE WORKING FROM HOME AND CURRENTLY TRAVELLING LESS, WHICH HAS ALSO HAD A VERY NEGATIVE IMPACT."

the plants and putting up screens between machines so that people working on different machines can't interact. We also have a requirement for facemasks for all employees. We worked on the shift changes so that people don't meet, and we have closed the canteens. And we haven't allowed external visitors, suppliers or whoever. So very strict measures in the plants.

"Through that, we also learned to have a close dialogue with local and national authorities to make it clear that this is a critical business for society.

"Thirdly, we wanted to show that we contribute to society in different ways. And one example is that we started producing face masks to supply to authorities in Sweden, we started to produce three million face masks according to the surgical mask standard in just a few weeks' time. So that was a fantastic effort from one of our small plants in Sweden."

TWM/5: In the last three months, what increases have you seen in volume in Europe?

"Actually, overall not much extra volume during the last three months. It was significantly higher production in the first quarter for Consumer Tissue. But then we had a significant destocking effect in the second quarter and lower volumes, so it's levelling out. With Consumer Tissue, consumption levels are 5-10% higher in the lockdown period. Whereas in Professional Hygiene there's structurally lower demand because there's the napkins, hand towels, etc, that are used in restaurants."

TWM/6: With all the changes at Essity's sites, will you go back, or is this the new way of doing business?

"That's interesting as this answer will also impact our view on how quickly Professional Hygiene will come back.

"We are looking at this now. We just finalised a survey amongst 10,000 of our white-collar office employees and we found that they are highly motivated and engaged still working from home, they feel strongly committed to performing for the company even when working from home.

"There was also a strong signal that they miss their colleagues! So, my guess would be that we may return mostly to the offices but have a much greater flexibility for working from home."

"ON A POSITIVE NOTE, AND ONE POSSIBLY FOR THE ENTIRE TISSUE INDUSTRY, THERE'S A VERY STRONG DEMAND TO REPLACE AIR DRYERS WITH PAPER HAND TOWELS. WE ARE PICKING UP A LOT OF BUSINESS LIKE THAT FROM EXISTING CUSTOMERS WHO ARE ASKING US TO REPLACE THEIR AIR DRYERS. BECAUSE OF COURSE THEY ARE BLOWING WATER DROPLETS AROUND THE WASHROOMS WHICH IS CONTRARY TO WHAT WE HAVE LEARNED FROM THIS PANDEMIC."

TWM/7: Do you expect tonnage to be steady over the next few months, even if parts of the world continue to see a second wave of the pandemic?

"I expect Consumer Tissue to be quite stable now. Consumers have realised that they don't need to stockpile."

"But it will take several quarters for Professional Hygiene to recover, because of the lower demand. A lot of distributors who have stockpiled products that needs to go through the system.

"On a positive note, and one possibly for the entire tissue industry, there's a very strong demand to replace air dryers with paper hand towels, because of course they are blowing water droplets around the washrooms which is contrary to what we have learned to be safe from this pandemic.

"Some 20% of the hand drying market is supplied by air driers, that's a big potential, both for replacements but also for replacing future needs.

"In the short term, this doesn't help us very much because in many of the bathrooms where we're replacing the air driers, there's no traffic yet, because schools and offices are closed. But eventually as people come back, this will benefit the tissue industry.

"So in the long term, we expect this to confirm the use of tissue and towel products in wider areas of society, as well as products such as hand sanitisers and soaps."

TWM/8: Do you expect to see further pulp price hikes this year?

"Pulp prices have been quite steady. We have been expecting some price increases from the fourth quarter last year, but we haven't really seen them. We expect a slight increase maybe in the third quarter compared to the second – but with an emphasis on slight."

TWM/9: In terms of e-commerce, do you forecast more and more people will start going online to buy their tissue and towel products?

"Yes, we're seeing a big, big shift in terms of e-commerce. For Essity as a whole, our online sales increased from 11.5% of sales a year ago in the second quarter of 2019, to 14% this second quarter. So a big, big pick up. This is clearly the fastest growing channel and that goes for both for Personal Hygiene and Consumer Tissue.

"We're seeing that consumers are using online more and more especially in lockdown. People are turning more to online channels when they're working from home."

TWM/10: What are the main opportunities and challenges for you and the tissue market in the next few months?

"For the main opportunities, we are very much focused on what we call the relative game. Because of volatility and uncertainty from external factors such as the Covid-19 pandemic, we are very much focusing on winning against our competitors and taking market shares. This means we will continue launching new products based on our innovations, we will continue to invest in advertising and promotion, and then also to benefit from smaller opportunities such as the air dryer replacements, kitchen towels, soaps and hand sanitisers. These are niche areas that are growing. Those are the opportunities. And of course, gaining market share.

"The main challenges are the big uncertainty and also especially for Professional Hygiene where I think we will see quite a subdued amount for some time. And then to adapt to that situation, and to be very, very flexible. It's not unlikely that things will continue to go back and forth. As we see in some countries, they open up and then they're closing down again. We will have to be very adaptable and flexible going forward."

MI

Kim Underhill
President, Kimberly-Clark North America

TWM/1: How has the Covid-19 pandemic impacted Kimberly-Clark and how has it responded?

"Kimberly-Clark is doing its part to make life a little less stressful during the Covid-19 pandemic. As the manufacturer of some of the world's most beloved tissue brands, we have accelerated production to meet the surge in demand around the world while prioritising the safety of our people.

"All of our efforts are guided by our value of caring – for our people and their families and our consumers. To date, Kimberly-Clark has made product and cash donations of more than $10m to help those most vulnerable to this crisis.

"Our Cottonelle and Andrex brands engaged consumers around the world in a new campaign of kindness and generosity designed to encourage people to share toilet paper instead of stockpiling it. The #ShareASquare initiative kicked off in March, donating $1m plus a million rolls of toilet paper to the United Way Worldwide Covid-19 Community Response and Recovery Fund.

"The fund will give vulnerable families the financial help they need as well as access to food, shelter and other social services.

"Cottonelle has also pledged to donate an additional $1 (up to $100,000) for every social media post that includes the hashtag #ShareASquare.

"Kleenex also launched the #AllTheFeelings campaign as a resource to support emotional health and wellbeing, sponsoring up to a total of 100,000 three-month subscriptions from Calm, a popular meditation app in the United States. The campaign was created to help recognise that there is comfort in knowing we're not alone during these uncertain times, and that there can be strength in vulnerability."

TWM/2: How has the pandemic impacted the tissue market?

"The increased demand was significant and one of the early indicators was in toilet paper. According to Nielsen data for the three-week period of 28 February 2020 to 21 March 2020, Americans spent more than $1.4bn on toilet paper.

"As one of the largest producers of tissue products in the US, I've seen the empty shelves, and our Kimberly-Clark employees have seen those empty shelves. We know how essential our products are, and we're inspired to work around the clock to produce and ship products to retailers."

TWM/3: What increases in volume for tissue products have you seen and do you expect the increase in demand for tissue products following the outbreak to continue?

"In addition to the demand, we've also taken steps to simplify production to increase speed and volume across our Cottonelle, Scott and Kleenex brands.

"Kimberly-Clark has also prioritised the health and safety of our people, and has taken extra precautions globally at our office, mill and distribution centre operations, which were developed in line with guidance from global health authorities.

"By prioritising the health and safety of our employees, we can keep working to provide the products the world is counting on to help ensure health and wellbeing."

TWM/4: What are your projections for how the AfH market will have to evolve and develop over the coming months and years following the outbreak?

"Looking at our first quarter financial report, demand remained strong in the AfH market, and we continue to work closely with distributors and customers to meet their increased health and safety needs in this current phase of the pandemic."

TWM/5: Do you expect to see an increase in pulp prices over the coming months?

"Despite increased demand for our products, access to pulp has not been an issue for our supply chain, and it appears that market pricing remains consistent with the levels seen toward the end of last year."

TWM/6: What changes and trends do you forecast for the changes to people's buying habits of these products in the coming months?

"While we cannot predict changes as a result of Covid-19 just yet, demand has generally remained strong as consumers continue to buy essentials while under varying degrees of stay-at-home orders.

"Not surprisingly, globally we saw e-commerce sales grow in the first quarter of the year, with most of sales concentrated in North America, China and South Korea."

TWM/7: What are the main challenges for K-C during 2020?

"The pandemic dramatically changed consumer buying habits and usage, which required us to adapt quickly and efficiently while keeping our employees safe as our primary focus.

"We're proud of how quickly we were able to implement changes to our production lines in order to do our best to keep up with consumer demand."

TWM/8: And the main opportunities?

"We know we were able to bring in many new users over the last few months, and we're excited about the opportunity to showcase to those consumers the Kimberly-Clark family of brands."

"THE #SHAREASQUARE INITIATIVE KICKED OFF IN MARCH, DONATING $1M PLUS A MILLION ROLLS OF TOILET PAPER TO THE UNITED WAY WORLDWIDE COVID-19 COMMUNITY RESPONSE AND RECOVERY FUND. THE FUND WILL GIVE VULNERABLE FAMILIES THE FINANCIAL HELP THEY NEED AS WELL AS ACCESS TO FOOD, SHELTER AND OTHER SOCIAL SERVICES."

Vivek Joshi
senior vice president and general manager, tissue category, for Georgia-Pacific's Consumer Products Group

WE QUICKLY RESPONDED BY INCREASING PRODUCTION WHERE WE COULD (MAKING 1.5M ADDITIONAL ROLLS PER DAY) AND USING A MANAGED DISTRIBUTION PROCESS TO SMARTLY NAVIGATE THROUGH THIS UNUSUAL PERIOD. WE ALSO WORKED HARD TO MAXIMISE THE NUMBER OF DELIVERIES WE CAN LOAD AND SHIP OUT OF OUR FACILITIES.

"In general, given the current situation surrounding the coronavirus/Covid-19, and just cold and flu season in general, we anticipated more handwashing – especially given how everyone is focused on and talking about good hand hygiene and preventing the spread of germs.

"We are experiencing declines in AfH as projected, due to business travel and vacation plan changes, along with companies encouraging employees to work from home when it makes sense.

"That said, we continue to see orders for some AfH products – specifically healthcare, manufacturing, retail/grocery and other essential businesses that are still operating. We are working hard to satisfy those critical needs.

"We're also getting inquiries around products required/desired to re-open, as businesses plan to bring employees and customer back. Related, we have seen 10X increase in demand with sanitiser products that we also sell to our AfH customers.

"For our retail business, we have seen a significant increase in orders beginning Mid-March. These increases have been as high as 2x our normal demand.

"We quickly responded by increasing production where we could (making 1.5m additional rolls per day) and using a managed distribution process to smartly navigate through this unusual period. We also worked hard to maximise the number of deliveries we can load and ship out of our facilities – you can just load and unload so fast. As a result, our mills and regional distribution centres managed to ship out ~120% of normal capacity.

"We also worked with customers to have direct shipments when possible to reduce distribution time. These efforts helped us reduced our shipping time to retailers by up to three days.

"We also developed the following statistics to help consumers understand how much product they would need: Use of Toilet Paper Stats: Based on IRI panel data, along with the US Census, the average U.S. household (2.6 people) uses 409 equivalised regular rolls per year.

"Using our own calculations, staying at home 24-7 would result in ~40% increase vs. average daily usage. Therefore, to last approximately two weeks, a two-person household would need ~9 double rolls, or ~5 mega rolls. A 4-person household would need ~17 double rolls, or~ 9 mega rolls to last approximately two weeks."

"We quickly responded by increasing production where we could, making 1.5m additional rolls per day": *Vivek Joshi*

BAOSUO

YD-PL450C Non-Stop Rewinding Line

Glue Free Lamination
Position Embossing

BaoSuo Enterprise Provide You The Turnkey Solution For Tissue Production

Tissue Machine

Converting Machine

Packing Machine

Baosuo Paper Machinery Manufacture Co., Ltd.
Tel:+86-757-86777529
E-mail:master@baosuo.com
Https://www.baosuo.com

GLOBAL REACH TWM WEBINAR HIGHLIGHTS TISSUE'S DYNAMIC NEW FUTURE

Industry leaders discuss the phenomenal response to demand, drivers to innovation, remote working, increased online security risks, health and economic security, and building trust in our products.

Tissue World Magazine's first ever live panel discussion webinar was shared by more than 500 industry personnel from tissue-linked companies across the globe. A total of 858 had registered to share the industry intelligence on offer, which discussed how companies were responding to these unprecedented times, and how the pandemic has accelerated the pace of change across the tissue industry.

Four expert speakers discussed the future of the tissue business model, its response to the substantial increase in demand for tissue following the outbreak of Covid-19, as well as cyber-security, BLM, home-working, and SKU simplification.

The format was designed to create focussed "chat show"-style sessions inviting anyone involved in the tissue making business to participate – from raw material suppliers, producers, converters, jumbo roll suppliers, all machinery suppliers, retailers and distributors.

The speakers were: Kim Underhill, Group President, Kimberly-Clark North America; Udaiyan Jatar, Founder, Blue Earth Network, USA; Brian J. Allen, Cyber Advisory Services, EY, USA; and Ivo Kool, senior product development manager, tissue, paper, nonwovens, Sam's Club, USA. Moderator: Jonathan Roberts, Industry Consultant, Pryor Roberts Communications, UK.

Key questions discussed included:

- How the tissue business is responding to the outbreak of Covid-19;
- Re-thinking the office environment and home working: how companies have adapted to engage with their employees and customers;
- What are the most significant supply chain challenges;
- Vulnerabilities that the virus has exposed in terms of cyber-security;
- 'Necessity is the mother of invention';
- What transformations does the future hold in the wake of Covid-19 in terms of consumer behaviour, trends and business operations?

TWM would like to thank all those that participated in the discussion.

We look forward to bringing the tissue industry more live debate on the key topics important to you over the coming months. Below, we summarise the key points raised.

Kim Underhill
Group President, Kimberly-Clark North America

"There are three big areas that have been especially challenging. First, the safety of our people and keeping our mills running. We quickly implemented social distancing, masks and temperature checks at the beginning of each shift, because we knew we needed to keep operations running and keep our people and their families safe.

"The second challenge was the unprecedented demand. Suddenly, something that we took for granted was something you couldn't imagine living without. Demand escalated very fast and the challenge was how to make more product quickly. It wasn't just Kimberly-Clark; the whole industry was tested, and we can still see signs of that.

"The last challenge was how we worked with our retail partners. When you have this sudden surge of demand it really tests the supply chain and opens cracks. The supply chain had never seen such an unprecedented consumer demand which opened a lot of challenges, but also opportunities.

"On the positive side, this crisis has given us an opportunity to accelerate changes we have wanted to do for a very long time. Internally, SKU management is very important. One thing we've learned which will be a lasting impact is SKU simplification. In some of our businesses we've cut SKU's by over 70%, and that has meant a 15-20% improvement in capacity. That is unrealised capacity that now sits in our system. The demand was so high that we were forced to make difficult choices. Now that we're on this side of the crisis, we learned those choices weren't so bad after all and I see that as a mindset-shift going forward.

"I think this is a great opportunity for the tissue world to not only think about our products today, but where we can innovate products that allow all of us to really gain confidence in protecting ourselves, our family and our environments more than ever before. Companies that can invent in this space and create a point of differentiation with real tangible, clinical evidence that you can prevent germs. I think that's going to be a significant opportunity for the tissue industry.

"Another positive outcome is rethinking the way we work moving forward. Employees want more flexibility and to work when they want and where they want. I believe the former emphasis on visibility and hours in the office is completely reframed by this whole experience.

"Now, we're much more focused on the outcomes of our business and how people are adjusting to working from home and learning how to balance multiple responsibilities. In the future, the Kimberly-Clark North America teams will have much more flexible working arrangements. We don't know exactly what that means just yet, but we'll never go back to the way we were before Covid-19."

"THIS IS A GREAT OPPORTUNITY FOR THE TISSUE WORLD TO NOT ONLY THINK ABOUT OUR PRODUCTS, BUT WHERE WE CAN INNOVATE PRODUCTS THAT ALLOW US TO REALLY GAIN CONFIDENCE IN PROTECTING OURSELVES, OUR FAMILY AND OUR ENVIRONMENTS MORE THAN EVER BEFORE."

Udaiyan Jatar
Founder, Blue Earth Network, USA

"THE PANDEMIC HAS RAISED BIG QUESTIONS – A PARADOX FOR MANY WORKING PEOPLE - BETWEEN HEALTH-SECURITY AND ECONOMIC-SECURITY. SEVERAL GLOBAL COMPANIES HAVE DONE A GOOD JOB OF BUILDING EMPATHY AND TRUST WITH EMPLOYERS AND CONSUMERS IN THIS CONTEXT. THIS TRUST-BUILDING HAS HELPED THEM BRING BACK PEOPLE, CONSUMERS AND OR EMPLOYEES, BACK TO THEIR STORES OR OFFICES."

"The pandemic has raised big questions – a paradox for many working people - between health-security and economic-security. Several global companies have done a good job of building empathy and trust with employers and consumers in this context.

"This trust-building has helped them bring back people, consumers and or employees, back to their stores or offices. Trust building is critical if you want people to put their lives in your hands – so they know you will not be cavalier with their safety or their livelihoods.

"The pandemic has disproportionately affected the poor, and in America, black people are bearing the brunt of the crisis. We have seen some companies combining their Covid response with their responses to the Black Lives Matter (BLM) movement, because they are related in terms of the systemic change that society needs.

"There is a greater need now, more than ever, to take real action beyond pretty words, and the best companies are really taking action. It's an opportunity for companies to actively seek to find and attract the best diverse talent into the industry.

"Smaller companies have a real opportunity to really re-examine their role in the community, product development and innovation more than ever before and look at it through the lens of the future. People now expect more transparency and justice throughout the value chain. They expect a future with more health and sanitation. The crisis has accelerated some investors' awakening to the fact that taking a longer-term view of things can lead to more transformative outcomes.

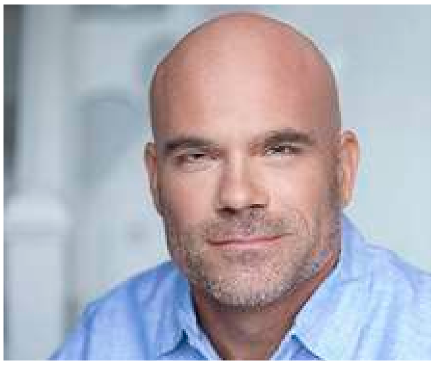
"It's an opportunity for visionary leaders to take a more long-term view towards how they invest in break-through innovation, and really change systems for the future."

Positive outcomes from the crisis: "There is an awakening to the failures that have affected our economy and society, even before the crisis. For example, the short term-ism in management culture.

"From a tactical standpoint there is an appreciation for working-from-home. People are recognising that working-from-home saves on commuting and unnecessary meetings. There's actually a surprising resilience in our human ability to connect online, through video conferencing and collaboration tools.

"We have seen that in our workshops with remote teams: if done right, it means you have to listen to people one at a time, so more voices are given air time, and more ideas are being debated.

"That's a really subtle but important factor. It helps breakthrough ideas. On an online format it becomes easier for these expressions to come forward."



Brian J. Allen
Cyber Advisory Services, EY

"In terms of the kinds of security issues companies and employees were facing during this new period of working remotely, we've definitely seen a ballooning of threats, which is fairly typical when criminals see a fresh opportunity. And it's coming from organised crime and different state actors. We are all working in a different environment and the biggest weaknesses we're seeing is employees not being aware of threats.

"One, we have to recognise we are working in a different environment. Two, the actors are very sophisticated. They are getting very good at their game. We're seeing very complicated phishing scams that are exploiting different vulnerabilities — they are selling personal protective equipment, they are offering advice from WHO and doctors, they are exploiting e-commerce.

"Security firms are keeping executives better informed about these risks so they can find the right balance between risk and reward, and can better manoeuvre in this new environment," he noted. "But that information about risks needs to be more timely and more in-depth.

"For the future, I think we'll see a more holistic approach. Rather than looking at risk management as different silos, such as crisis management, information security, or business security, we're seeing a lot of alignment in risk practice to be more coordinated as we move through digitalisation."

"IN TERMS OF THE KINDS OF SECURITY ISSUES COMPANIES AND EMPLOYEES WERE FACING DURING THIS NEW PERIOD OF WORKING REMOTELY, WE'VE DEFINITELY SEEN A BALLOONING OF THREATS, WHICH IS FAIRLY TYPICAL WHEN CRIMINALS SEE A FRESH OPPORTUNITY. AND IT'S COMING FROM ORGANISED CRIME AND DIFFERENT STATE ACTORS. WE ARE ALL WORKING IN A DIFFERENT ENVIRONMENT AND THE BIGGEST WEAKNESSES WE'RE SEEING IS EMPLOYEES NOT BEING AWARE OF THREATS."

Ivo Kool
Sr. Product Development Manager, Tissue, Paper, Nonwovens, Sam's Club, USA

"From the beginning of March, we got hit by an unprecedented bout of purchases. From then until the end of April, the purchases almost doubled and then slowly went down to about half.

"So our issue was that as we sell a premium TAD product for bath tissue and towel, we are very committed to what our member's want and we were not going to change that product.

"Our vendors worked with us and we managed to hit capacity. We have a very efficient team of merchants and replenishment.

"The merchants scrambled to get brands and our replenishment people were unbelievable, we went from delivery into the club to manually ordering and manually saying where product had to go to maintain supply evenly through our whole system.

"We would get a delivery and the product would be gone in an hour or two because people would get on the phone and say: "Hey, it's in town!" And off everyone would go and buy it. One of the biggest issues raised is when people replenish tissue supplies.

"For our private brand business, our vendors pulled out all the stops. We're levelling out now, but it was unbelievable what we went through."

"SO OUR ISSUE WAS THAT AS WE SELL A PREMIUM TAD PRODUCT FOR BATH TISSUE AND TOWEL, WE ARE VERY COMMITTED TO WHAT OUR MEMBER'S WANT AND WE WERE NOT GOING TO CHANGE THAT PRODUCT. OUR VENDORS WORKED WITH US AND WE MANAGED TO HIT CAPACITY. WE HAVE A VERY EFFICIENT TEAM OF MERCHANTS AND REPLENISHMENT."

Q&A: Ivo Kool

Q/1: Do you see the Covid crisis accelerating the USA trend to private brands?

"If Private Brands are the same quality as the premium private brands then the private brands will continue to grow relative to brands. Covid may be speeding this trend up as people try whatever is available."

Q/2: In this increasingly online purchasing environment, how do you balance price versus quality in tissue paper? Will there be any changes?

"Our private brand is high quality for an ultra-premium product at a reasonable price. Online has to solve issue with shipping costs for such a bulky package."

Q/3: Does sustainability playa role in selecting recycled fibre vs virgin fibre in consumer vs business markets?

"The pulp used in our private brand products are certified for sustainable forestry. Northwest US Hemlock and Western Canada NBSK is primarily made with sawmill waste. Hardwood is a fast rotation plantation grown wood.

"Availability of high quality office waste may be an issue after Covid as many office paper machines have be curtailed in the last three months and probably will be converted to run other grades. Work-from-Home seems to be here to stay.

"We have seen the major copy paper producers taking major curtailment. I am not sure if a non-integrated mill making office papers can be cost competitive. Finding a relatively clean waste stream to supply recycled tissue machines making white grades will be an issue. Bleaching OCC may be possible but that tends to be a softwood product with little hardwood and those mills run Kappa's well above 100 (bleached pulp is normally in the 30 Kappa range)."

"WE HAVE SEEN THE MAJOR COPY PAPER PRODUCERS TAKING MAJOR CURTAILMENT. I AM NOT SURE IF A NON-INTEGRATED MILL MAKING OFFICE PAPERS CAN BE COST COMPETITIVE. FINDING A RELATIVELY CLEAN WASTE STREAM TO SUPPLY RECYCLED TISSUE MACHINES MAKING WHITE GRADES WILL BE AN ISSUE."

858
People who had registered for the webinar

514
Industry personnel who took part

15-20%
Capacity improvements, as discussed by K-C's Kim Underhill

SERBIA'S 'SURVIVAL–MODE' TISSUE BUSINESS HAS RELATIVELY NEW AND FAST MACHINERY AND ACTIVE REGIONAL TRADE

Republic's long-term recovery from years of political instability and the 2008 crash will be further hit by Covid-19, but growing economy promises sustainable performance.

The Republic of Serbia is emerging from both the global economic collapse of 2008 and 30 years of political instability stemming from multiple breakups of the former Yugoslavia. Agreements with Kosovo were extended in 2015, while the nation set a goal to join the European Union by 2025.

Serbia is landlocked bordering eight countries (Bosnia and Herzegovina, Bulgaria, Croatia, Hungary, Kosovo, Macedonia, Montenegro, Romania). About 58% of the land is used in agriculture and 32% is forested. Serbia's population is older and shrinking at -0.47% with deaths exceed births and no net immigration.

Despite the shrinking population, Serbia's economy has been growing when measured as GDP per capita. Figure 1 shows this trend as blue bars representing GDP/Capita in 2010 base US$. Overall GDP is growing about 1.9% per year (2017). The downward line represents the population loss over this same period. The political stability of the past five years should help to improve these metrics. However, the current Covid-19 pandemic could slow the recovery process.

Figure 2 shows other key metrics for supporting tissue consumption. The inflation trend is shown as blue bars represented in constant 2010 US$ and has begun to slow after a steep increase from 2008 to 2012. The unemployment rate represented by the line shows significant improvement from the 25% rate in 2012, but the rate is still high compared to Western Europe.

Serbia's tissue production is limited to one mill and is focused on consumer grades. Figure 3 shows the production of this mill as more than half bath tissue with consumer towel and napkin products combining to fill the rest of the product portfolio. Commercial or AfH products and specialty tissue products are not produced in Serbia.

The tissue fibre source is 100% imported virgin bailed pulp. The furnish sources are split between northern and southern species with a small amount of eucalyptus as shown in Figure 4.

The application of the imported furnish is broken down by product in Figure 5. Consumer bath tissue uses a large proportion (about 80%) of hardwood fibre. Consumer napkin and towel products use a more balanced furnish with a roughly 60% hardwood and 40% softwood blend.

Serbia also participates in tissue trade, both importing and exporting tissue products. Figure 6 shows the evolution of tissue exports by Serbia since 2007. The increased export activity appears to follow the economic improvement shown in Figures 1 and 2.

Total tissue exports are now running slightly more than total Serbian domestic

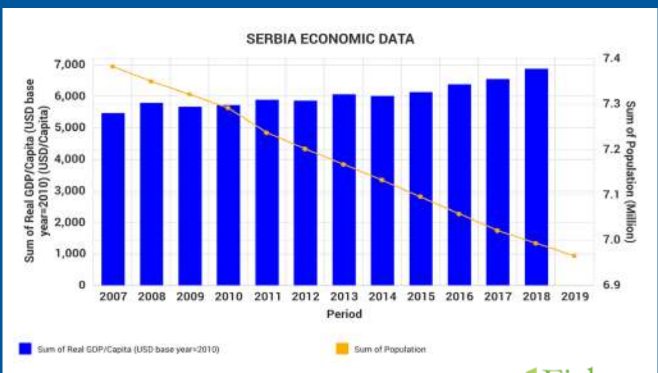
Bruce Janda
Senior consultant, Fisher International

production. This probably indicates that Serbia is importing tissue parent rolls for converting and then re-exporting them. Key 2019 tissue customers were Bosnia-Herzegovina, Greece, Hungary, North Macedonia, and Romania.

The corresponding "Serbia Tissue Imports" are shown in Figure 7. Tissue imports have also grown with the improved economy and are running in approximate balance in 2018 and 2019. Imports appear low in 2019 but this is not significant as UN ComTrade results are frequently reported late.

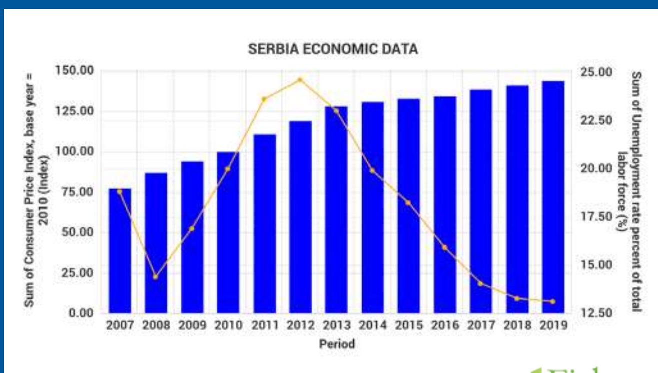
Tissue suppliers with more than 10% of the trade include Hungary, Bosnia-Herzegovina, Romania, and Italy.

Figures 5, 6, and 7 show Serbia produces tissue required by its population but engages in trade at about the same rate to get the



Source: Fisher*Solve* Next
©2020 Fisher International, Inc.

Figure 1



Source: Fisher*Solve* Next
©2020 Fisher International, Inc.

Figure 2

product formats required. It also suggests significant tissue parent rolls are exchanged for converting by other countries.

Total Serbian tissue consumption per person appears to be about 8 Kg/capita. This tissue consumption rate is typical of Eastern Europe but about half of Western Europe consumption rates. This suggests that aggregate Serbia tissue consumption has room to grow with future economic improvement, despite declining population.

Serbia's tissue producer has been careful in capacity additions to grow with consumer demand. Figure 8 shows tissue machine additions and retirements since 2007. One machine was retired in 2008, while new ones were added in 2010 and 2018.

The significant tissue trade by Serbia with its neighbours allows comparison of the relative quality of the tissue machines in the trade mix. Hungary, Bosnia-Herzegovina, Romania, Italy Greece, Slovenia, and Bulgaria appear to be the current key trade partners. North Macedonia does not have tissue production.

Figure 9 shows the relative quality of the tissue machines using technical age and speed as indicators. The size of the bubble represents the relative scale of each country's tissue production. Hungary and Serbia have the newest and fastest tissue machine fleets.

SERBIA'S TISSUE BUSINESS APPEARS TO BE POSITIONED AS A SURVIVOR. THE ECONOMY IS IMPROVING FROM A TOUGH PERIOD OF INSTABILITY AND THERE IS VERY ACTIVE TRADE IN TISSUE PRODUCTS WITH THE REGION. SERBIA'S TISSUE MACHINES ARE RELATIVELY NEW AND FAST FOR THE REGION.

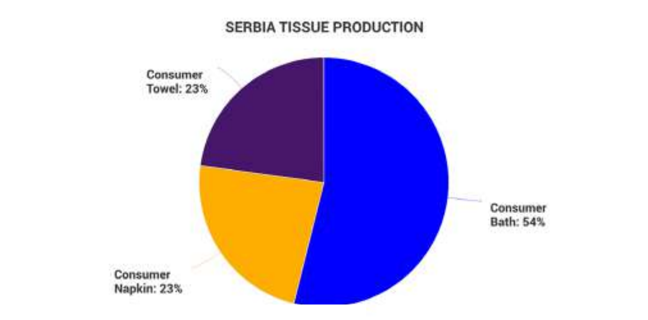
Italy's production size tends to overshadow Bosnia-Herzegovina, but they represent the next most productive tissue machine sets.

The relative cost position of Serbia's tissue trade set is shown in Figure 10. Serbia does not have the lower cost recovered paper furnish component of Romania, Bulgaria, Slovenia, and Italy. Italy represents most of the production in this group. The cost of tissue manufactured can also be expressed as carbon emissions per ton. Figure 11 shows that the disadvantage for Serbia is the relative electric grid carbon production and not the tissue mill fuel consumed on-site.

The current global pandemic is another risk to tissue production. FisherSolveTM Next offers up to date statistics by region, country and state or province to track the health of producers and consumers. Figure 12 shows the relative position (early June 2020) of Serbia relative to its trade partners. The blue bars represent average total cases per million of population and the yellow line is the current active case rate per million. Serbia and Italy are particularly hard hit at this point. We can hope that means the worst is over for them.

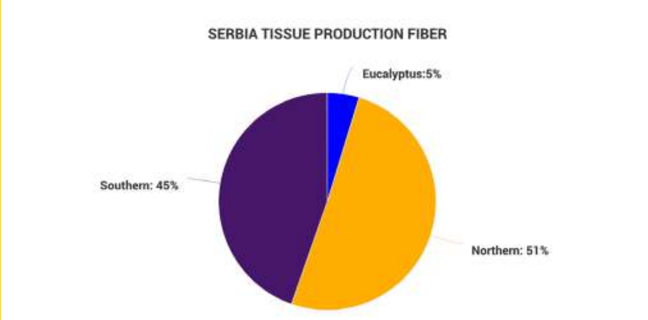
Serbia's tissue business appears to be positioned as a survivor. The economy is improving from a tough period of instability and there is very active trade in tissue products with the region. Serbia's tissue machines are relatively new and fast for the region. Tissue production cost is slightly high but reflects and imported furnish. Carbon emissions per ton are very high due to the carbon content of Serbia's electric grid. This could be a problem for further export development as Western Europe moves to a lower carbon economy.

Serbia has followed Italy in the total number of Covid-19 cases per million and current infection rate. Hopefully, this indicates that both countries are closer to coming out of the epidemic.



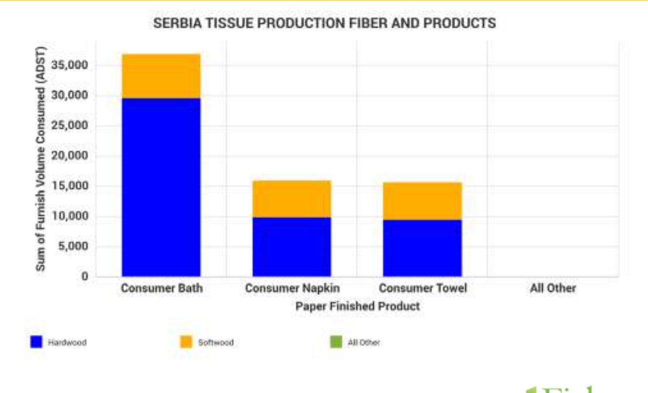
Source: Fisher*Solve* Next
©2020 Fisher International, Inc.

Figure 3



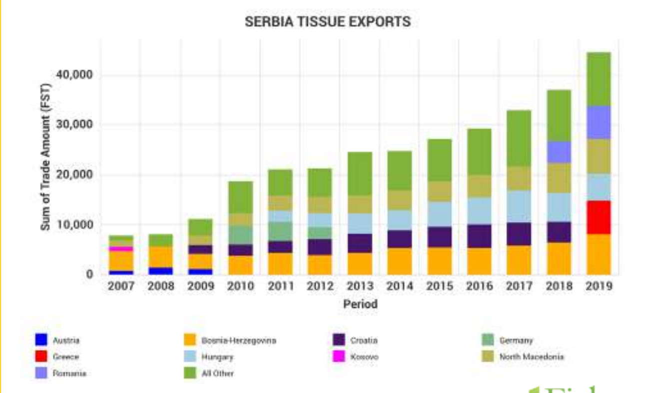
Source: Fisher*Solve* Next
©2020 Fisher International, Inc.

Figure 4



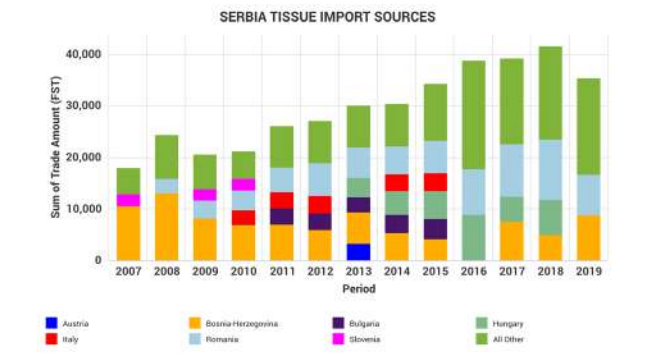
Source: Fisher*Solve* Next
©2020 Fisher International, Inc.

Figure 5



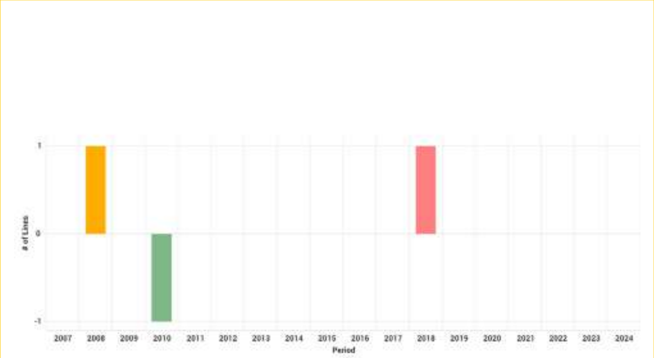
Source: Fisher*Solve* Next
©2020 Fisher International, Inc.

Figure 6



Source: Fisher*Solve* Next

Figure 7

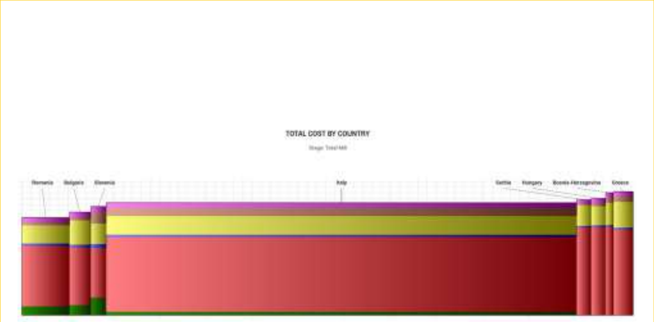


Source: Fisher*Solve* Next

Figure 8

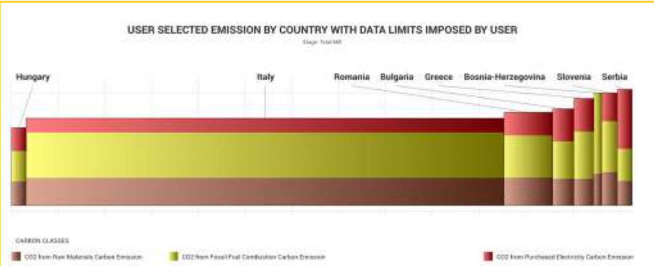
Source: Fisher*Solve* Next

Figure 9



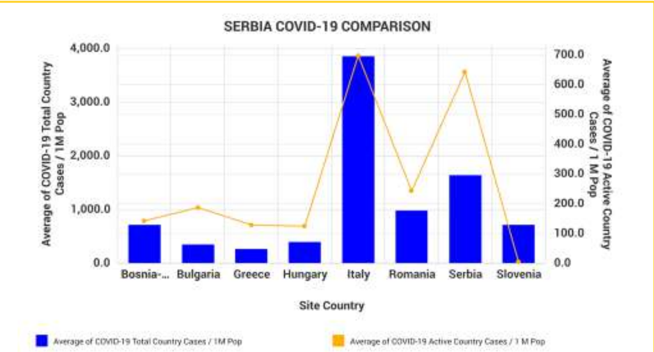
Source: Fisher*Solve* Next

Figure 10



Source: Fisher*Solve* Next

Figure 11



Source: Fisher*Solve* Next

Figure 12

About Fisher International, Inc.
Fisher International, by virtue of its deep expertise in the pulp and paper industry, provides insights, intelligence, benchmarking, and modeling across myriad scenarios. By arming companies with the knowledge that will help them gain a better understanding of their strengths and help identify weaknesses, Fisher is helping businesses stave off challenges and better position themselves for long-term growth. For more information, visit www.fisheri.com, email info@fisheri.com or call +1 203.854.5390 (USA)

PUBLIC'S GROWING ACCEPTANCE OF PAPER TOWELS LEADS GROWTH POTENTIAL

With disposable income in Serbia set to decline during 2020 and consumers expected to rationalise their spending, the country's 3% pre-Covid-19 value sales increase likely to stall.

Standing below per capita retail tissue consumption compared to developed regions, the Serbian market leaves room for organic growth in the coming years. It is particularly the case in product categories like paper towels and napkins. In 2019 retail sales of consumer tissue in Serbia saw an increase of 3% in value to reach US$168m (2019 fixed exchange rate, real value) and 2.5% growth in volume to a total of 36,000 tonnes.

Paper towels recorded particularly strong performance, above the overall consumer tissue growth in value and volume terms, as the category continued to gain acceptance among Serbian households.

In early 2020, concerns over supply chain disruption and policies of home seclusion led to a surge in sales for a range of food, personal, and hygiene care products in the country, much like in many other markets. Toilet paper was among the categories in high demand. The surge, however, is expected to subside through the second half of 2020. Moreover, as economic fallout of Covid-19 is increasingly felt across markets and households, many consumers in Serbia will likely be rationalising their spending and placing essentials and affordable options on the top of the shopping lists. Per capita disposables incomes in Serbia are projected to decline by over 1% in 2020.

Expected stronger focus on affordability, at least in short to medium term in the aftermath of coronavirus, is likely to create

Svetlana Uduslivaia
Euromonitor International's head of tissue & hygiene industry

IN EARLY 2020, CONCERNS OVER SUPPLY CHAIN DISRUPTION AND POLICIES OF HOME SECLUSION LED TO SURGE IN SALES FOR A RANGE OF FOOD, PERSONAL, AND HYGIENE CARE PRODUCTS IN THE COUNTRY. TOILET PAPER WAS AMONG THE CATEGORIES IN HIGH DEMAND. THE SURGE, HOWEVER, IS EXPECTED TO SUBSIDE THROUGH THE SECOND HALF OF 2020.

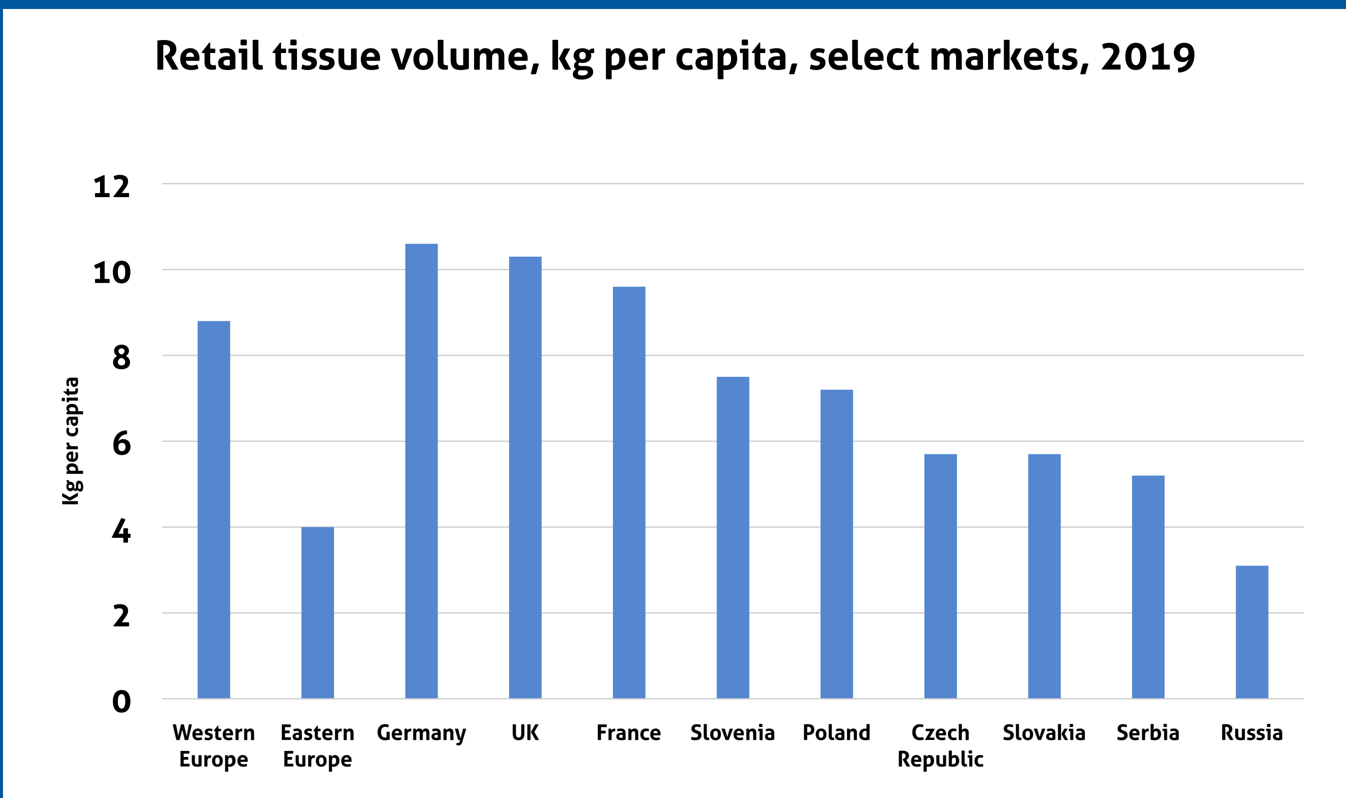


Table 1

Source: Euromonitor International

Private label retail tissue, select markets, % value share, 2019

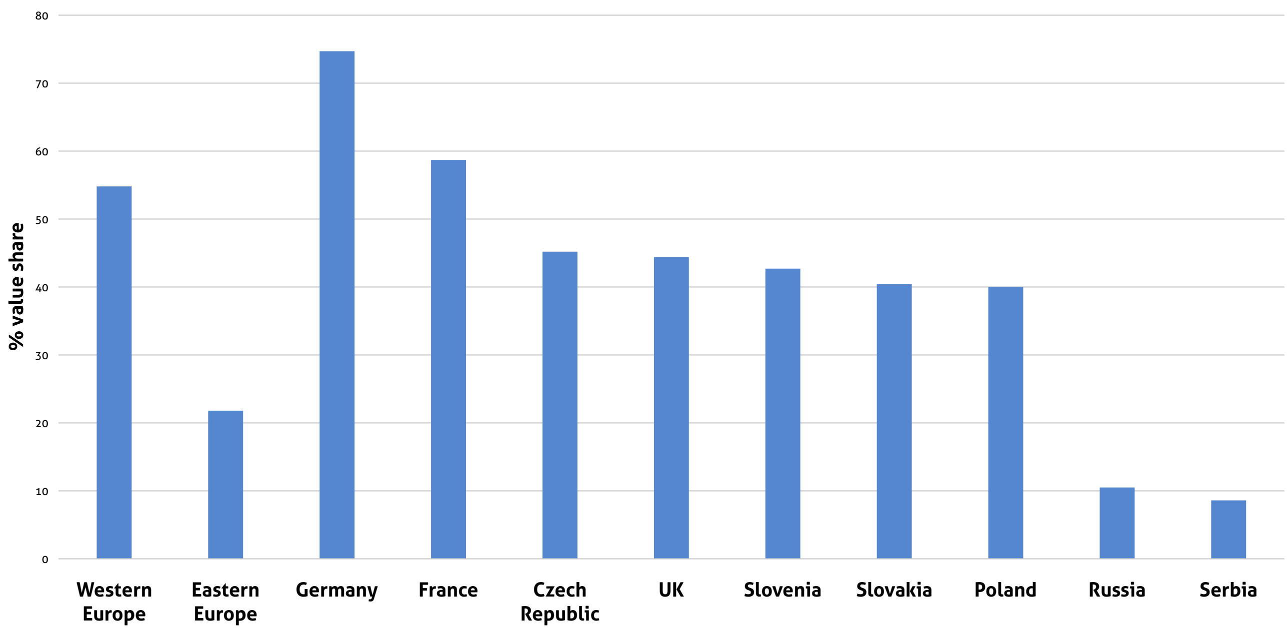


Table 2 *Source: Euromonitor International*

further platform for private label expansion in Serbia. In 2019, private label consumer tissue penetration in the country stood well below that of developed Western European markets and even some Eastern European markets. As the country's modern retail landscape continues to evolve, it opens up opportunities for further product development and wider access to private label tissue.

The entry of Lidl into the Serbian market in 2018 was met with substantial public interest, with consumers forming a large queue to enter the retailer's first outlet. Lidl supported its launch into the country through a television campaign and opened 23 new outlets by the end of 2018.

The retailer continued its expansion throughout 2019, becoming the fourth most popular player in modern grocery retail in Serbia in that year.

The expansion of Lidl adds to the competitive landscape in the country, including private label. Delhaize, Univerexport, and Mercator are among the established private label players in retail tissue in Serbia. All three opened more retail outlets in 2019, thus giving broader platform to their own store brands.

Wider access to private label across modern retail and improving quality of its tissue products, coupled with competitive pricing, have been helping retailers to grow private label tissue sales.

Lidl's activity in Serbia is likely to spur further innovation and dynamism in store brands, also tapping into increased consumer need for cost savings in view of Covid-19 economic downturn.

With private label and affordability high on the agenda, the pressure is on branded tissue products to innovate and compete on quality. While many brands in Serbia have been focusing on discounts and promotions to draw consumer attention and share of spending, the development in premium segment also continues, with products like Zewa Deluxe line of toilet paper by Essity promoting its design, softer cushions, high absorbency, and Aqua Tube core that is said to be 100% biodegradable.

The company has been also increasingly utilising social media, including YouTube, to communicate with consumers in Serbia. Zewa Deluxe advertising campaigns and videos on YouTube aimed at consumers in Serbia generated over four million views.

Over 2019-2024, Serbian consumer tissue market is expected to see 2% value (US$, 2019 fixed exchange rate, real value) and 2% volume CAGR growth. The aftermath of Covid-19 and the resulting depression of household incomes and spending power are expected to put downward pressure on revenue growth in short to medium term, with value segment of consumer tissue likely being front and centre in retail.

Long-term opportunities certainly exist across price segments in Serbia, including premium tissue. However, broader Covid-driven consumer shifts will put more pressure on the premium segment to convey to consumers quality and efficiency, with tangible benefits to households that continue to re-think their approach to "value for money".

THE ENTRY OF LIDL INTO THE SERBIAN MARKET IN 2018 WAS MET WITH SUBSTANTIAL PUBLIC INTEREST, WITH CONSUMERS FORMING A LARGE QUEUE TO ENTER THE RETAILER'S FIRST OUTLET. LIDL SUPPORTED ITS LAUNCH INTO THE COUNTRY THROUGH A TELEVISION CAMPAIGN AND OPENED 23 NEW OUTLETS BY THE END OF 2018. THE RETAILER CONTINUED ITS EXPANSION THROUGHOUT 2019, BECOMING THE FOURTH MOST POPULAR PLAYER IN MODERN GROCERY RETAIL IN SERBIA IN THAT YEAR.

SEARCH FOR NEW MARKETS AS DEMAND FALLS BELOW PRE-COVID-19 LEVEL

Pako Group Company is a family business founded in Belgrade, Serbia in 1995. Under its UNO brand, it specialises in the production and distribution of toilet paper, tissue and napkins. TWM spoke to chief executive Nenad Marković.

TWM/1: Tell us a little about your company...

"The Pako Group Company is a small independent company that focuses on producing specific high-quality products that puts us above the competition. We have 25 employees and produce 2,000 tonnes per year. The safety of our employees and the product is our priority, that is why we keep our space extremely clean and the production process is fully automated."

TWM/2: What investments have you made recently, and what growth trends do you see in Serbia?

"We keep on investing in equipment and human resources. We have ISO standard and we are constantly keeping up with all the requirements of the current market. The Serbian tissue market is certainly smaller than the EU market, as both the demand and purchase power are smaller. However, Serbia is considered a growing market and we notice constant growth year by year, so we expect this trend to continue in the years to come."

TWM/3: Are private label products becoming more popular in Serbia?

"Private label is very present in our market. Almost every commercial chain, big or small, has had its own brand for a while now. There is a noticeable trend of the increase in private label purchases because the commercial chains can respond to consumers' demands much quicker that way, and the manufacturers are less burdened with placing and marketing. Keeping in mind that the markets in the surrounding countries have a higher percentage of private label production, we are expecting this increasing trend to continue in Serbian market also."

TWM/4: What tissue trends are you seeing in the surrounding region?

"To our knowledge, markets in the surrounding countries are similar to the Serbian market. Until recently, those were the markets with low consumption, but now there is a noticeable increase and a future expansion is expected. Our company has been present with its products in Macedonia and Kosovo for many years, and the quality of our products has become recognisable there. Of course, we are also planning to expand our presence to the markets of other surrounding countries in the future."

TWM/5: How has Covid-19 impacted your business?

"Similarly as in the rest of the world, Covid-19 caused an increased in demand in the beginning, which we successfully met. As the situation stabilised, so did the demand, and now it is decreased about 10-15% compared to pre-Covid-19. We expect it to remain on that level for the time being.

"As with other companies in the region, our company is affected by the current Covid-19 impact. We are trying to compensate for the decreased demand by placing our products to the new markets. We are also using this turbulent period to improve our procedures.

"We plan to continue to constantly invest in new equipment and products, to increase the production and "conquer" new markets."

Growth set to continue: *investment in equipment and human resources at the Pako Group factory in Belgrade*

CONSUMERS ARE GETTING SMARTER – AND QUALITY PREVAILS

In an awakening market with more and more company start-ups, Serbia's tissue industry is "in a constant state of growth." Here, Lazar Stevanović, commercial director of Čačak-based manufacturer Camelia, looks to the future.

TWM/1: Tell us about your company . . .

"Camelia was founded in 2006 from humble beginning – with just four workers, we bought a machine and faced something that was completely new to us all at the moment.

"As time passed, a second machine arrived, followed by a third shortly after. This way we were soon able to offer our customers a plethora of products – paper, tissues, toilet paper, kitchen towels, and serviettes – the same products we produce today, but on much more modern machines.

"We expect a new machine to arrive by the end of the year, the likes of which have not yet been seen in Serbia. I believe that will increase our quality by a significant margin and substantially increase our capacity. That is all I can say for now."

TWM/2: Is there growth in the tissue market in Serbia and do you expect it to continue?

"The industry we are in is in a constant state of growth, which means that more and more companies are appearing. The figures of the leading companies in the industry are garnering a noticeable growth. Of course, there are instances in which smaller companies cease operations, but overall, the number of such cases is negligible.

"I believe this industry has a bright future ahead of it, but, of course, that remains to be seen in the coming years. The biggest share of the market belongs to large trade systems. There is a huge number of markets, usually at good locations, and they take first place. Apart from that, almost every town in Serbia has a local market chain that should not be dismissed in any way. An interesting fact is that many traditional marketplaces survive in Serbia as well.

"Marketplaces still function as a place where you can find whatever you may need at a given time, and many citizens still visit such places whether it be as a force of habit or just the trust they have in the sellers located there. With that in mind, marketplaces should not be dismissed either, no matter which industry you are in."

TWM/3: Is there much private label in Serbia?

"Private labels in Serbia take up much of the market. If you are serious in any way, you must always be focused on the private label. There are certain companies that are focused solely on producing private labels and I can say their profit margins are impressive.

"As I have mentioned before, a large part of the market belongs to numerous systems, and all of them have their own private label. Recently, smaller chains began acting

WE BOUGHT A MACHINE AND FACED SOMETHING THAT WAS COMPLETELY NEW TO US ALL AT THE MOMENT. .AS TIME PASSED, A SECOND MACHINE ARRIVED, FOLLOWED BY A THIRD SHORTLY AFTER. THIS WAY WE WERE SOON ABLE TO OFFER OUR CUSTOMERS A PLETHORA OF PRODUCTS – PAPER, TISSUES, TOILET PAPER, KITCHEN TOWELS, AND SERVIETTES – THE SAME PRODUCTS WE PRODUCE TODAY, BUT ON MUCH MORE MODERN MACHINES.

Camelia's Lazar Stevanović: *Advanced machine expected to pioneer new quality products* similarly, so we are now in a situation where almost every market has its own private label. In any case, private labels are very present in Serbia, but I expect a surge in the following years."

TWM/4: How is the consumer market doing?

"The situation in Serbia has improved in the past several years. I believe - and often say - that consumers are much smarter nowadays. Cellulose products rank number one, definitely. A noticeable trend in Serbia is that consumers are often buying quality paper in larger packaging, which was not the case just a few years ago.

"Consumers easily spot quality and care very much about what they receive for the money they give. You can fool a customer once, but that is where the story ends, and you end up painting a bad picture for your brand. Every town is a story for itself.

"There is not a single template that can be applied everywhere. What is common everywhere is that quality prevails and consumers easily recognise it."

CONSUMERS EASILY SPOT QUALITY AND CARE VERY MUCH ABOUT WHAT THEY RECEIVE FOR THE MONEY THEY GIVE. YOU CAN FOOL A CUSTOMER ONCE, BUT THAT IS WHERE THE STORY ENDS, AND YOU END UP PAINTING A BAD PICTURE FOR YOUR BRAND.

TWM/5: What trends are you seeing in the surrounding countries in terms of tissue?

"We are present both on the domestic market and in the countries of the region. Adding to that, Serbia is a very interesting market for all the key players in the region. I see that as a positive foundation, because healthy competition is something that entices you to improve yourself.

"A less positive situation is the one in which smaller companies are trying to win market share by undercutting prices by a huge margin. They can cause a brief disruption of the domestic companies, but soon they come to a realisation that it is impossible to operate without healthy profit margins.

"We have an excellent cooperation with all the countries in the region. There is a huge potential for improvement, but we are satisfied where we are now."

A LESS POSITIVE SITUATION IS THE ONE IN WHICH SMALLER COMPANIES ARE TRYING TO WIN MARKET SHARE BY UNDERCUTTING PRICES BY A HUGE MARGIN. THEY CAN CAUSE A BRIEF DISRUPTION OF THE DOMESTIC COMPANIES, BUT SOON THEY COME TO A REALISATION THAT IT IS IMPOSSIBLE TO OPERATE WITHOUT HEALTHY PROFIT MARGINS.

TWM/6: How is Covid-19 impacting the region?

"The Covid-19 situation in Serbia is still far from perfect. We have had a surge of infections during the past two weeks, prompting the Serbian Government to reimpose some of the restrictive measures. I believe we have let down our guard too soon, blinded by the brief good results we achieved and soon acted as if nothing is happening at all.

"Citizens are avoiding huge crowds, so they are shopping only much more often. Many people were laid off as well, so purchasing power took a hit as well. At this moment, no single person can reliably predict how long this situation will last. We are already feeling some consequences and undoubtedly more will follow."

"On the other side, there are people who are in constant fear both for themselves and their families. As far as our company is concerned, we had no major issues so far.

"All workers have been issued safety masks and we have imposed mandatory disinfection. It is, of course, impossible to keep track of their activities outside of work, but we try to respect the safety guidelines as much as possible during work hours. So far that has yielded good results."

TWM/7: How is Covid-19 impacting your company, what key opportunities and challenges come with it?

"I am of the opinion that nothing positive arose from the outbreak of the novel coronavirus. Some people would say that the sales of toilet paper have jumped, which was true, but only during the first few weeks of the outbreak, followed by a downturn in sales, because all the purchased product had to be expended first.

TWM/8: What are your plans for the next few years?

"We are finalising the building of a large building that will significantly ease our workflow. At the moment our capacities are filled, and that is the biggest issue we currently face from a business standpoint. We expect that to change by the end of the year. If you plan on competing and improving yourself, constant investments are needed.

"With that in mind we are already planning to build new facilities at the start of the next year. Infrastructure is something that requires constant improvement. A space you find adequate today suddenly becomes way too small tomorrow.

"By opening a distribution center in Belgrade, we have gained significant advantages in terms of logistics, and cut our delivery times to an absolute minimum. Adaptability is a key trait in this business. We constantly listen to the needs of our consumers and the latest trends in the market, which is in a way a key to our success."

I AM OF THE OPINION THAT NOTHING POSITIVE AROSE FROM THE OUTBREAK OF THE NOVEL CORONAVIRUS. SOME PEOPLE WOULD SAY THAT THE SALES OF TOILET PAPER HAVE JUMPED, WHICH WAS TRUE, BUT ONLY DURING THE FIRST FEW WEEKS OF THE OUTBREAK, FOLLOWED BY A DOWNTURN IN SALES, BECAUSE ALL THE PURCHASED PRODUCT HAD TO BE EXPENDED FIRST.

NECESSITY – IN THE SHAPE OF A GLOBAL PANDEMIC – HAS BEEN THE MOTHER OF INVENTION

Covid-19 turned the way we work upside down. But Oday Abbosh, founder and chief executive of Better All Round and chairman of Consuma Paper Products, UK, says innovation must be for life, not just a crisis.

Oday Abbosh
Founder and chief executive of Better All Round and chairman of Consuma Paper Products

As we emerge from a turbulent first half of 2020, two qualities have helped us ride the wave of unpredictability ... agility and collaboration. The pandemic meant that the industry needed to be agile, and needed to collaborate, and its response has been impressive. But that response has pointed to a more fundamental issue - why there is so little innovation in our category. The plain fact is that in normal times there simply aren't enough opportunities when agility and collaboration can be allied as a progressive force, and without these strengths, innovation can be hard to come by.

Covid-19 changed that quickly. Whilst the tissue sector wasn't at risk of folding or needing to pivot to survive the pandemic, it was clear the situation needed an approach different to a simply accelerated business-as-usual.

Our most immediate challenges related to the systemic rigidity of supply chain, working practises, technical logistics and how to respond to quickly changing stock forecasts in a business which whilst seasonal, is typically quite predictable from year-to-year, never mind week-to-week. All, coincidentally, barriers to innovation that we face day-to-day.

Better All Round acquired Consuma in 2018 and it's fair to say that adopting the same approach the BAR team harnessed to bring Ora to market hasn't been as easy to do on a much larger scale. The infrastructure and systems we work with, although effective, can inhibit and stifle innovation. Yet, recent events have shown that when a crisis hits, the way we work can be turned upside down instantly to no real detriment. Agility and collaboration have to be found. Where there is a will, there's a way, it would seem, or as is well known, necessity is the mother of invention.

Consumer stockpiling created an overnight need for manufacturers and retailers to be creative in how to meet demand. In this situation, it was clear that an automated systems driven supply chain benefited neither manufacturer nor retailer.

Ordering and fulfilment algorithms are great but not when things change so dramatically overnight. We simply had to work collaboratively with retailers to adapt product inventories and optimise the tiny amount of flexibility there was in the system to succeed, and succeed we did.

This means that in the future, should our automated systems-driven approach present itself as an obstacle to innovation, we must remember that the ability to be nimble is there and is worth seeking out in the name of better business performance, and ultimately consumer service. We also need to hold on to the trust that collaborative working engenders. At Consuma we leveraged our expertise to problem solve the shortfalls in supply. We didn't restrict our role to being an implementer.

We were trusted to find solutions that truly helped everyone. Some solutions really stretched us outside our comfort zone. But as well as delivering short term gain it has also brought long term benefits. With private label continuing to grow, trust between manufacturer and retailer will become all the more important, especially if we want retailers to entertain a leap into an innovative, new, commercial unknown.

Similarly, social distancing required us to trust our colleagues to work as collaboratively remotely as they do in the close quarter manufacturing environment. Culturally it was quite a shift.

From the virtual tours of the factory we introduced to support recruitment drives, to the remote home-working practices we managed to resource in a matter of days, the switch paid dividends. If we hold on to this way of working, we have the potential to attract a greater variety of candidates to our talent pool, including those who previously may have needed more flexibility in working hours, or who were simply too far away physically. Isn't a more diverse talent pool a more fertile ground for fresh, new ideas than an identikit workforce?

Finally, we must address how our production infrastructure can impair our ability to be nimble and innovative. The low margins of our business necessitate automation with the financials involved predisposing the business to a 'sweating assets' mentality.

This restricts speculative investments and can mean manufacturers aren't always keeping pace with technological developments that could support innovation. The flip side of machine investment is that the more you rely on automation, the less flexibility you have in the production infrastructure to experiment.

Yet during the crisis we really relied on the remote connectivity offered by our newer machines to minimise production downtime and reduce unnecessary risk of infection.

The best scenario is for the production infrastructure to be carefully balanced to deliver efficiency and flexibility. Capex investment programmes which will achieve this, need agile management to seize opportunities when they arise. They should be ongoing and not just activated at the point of obsolescence.

Covid-19 evidenced that innovation thrives at Consuma and can do in our category as a whole if we are willing to create the conditions to allow it to grow. As we face more testing times ahead, be they climate change, Brexit, rapidly evolving technologies and changing consumer habits, we must continue to innovate how we work and what we produce, to build the resilience required to weather these storms and better serve our customers.

Without doing so, we not only risk stagnating, we risk declining, underscoring why innovation must be for life, not just pandemics.

"IF WE HOLD ON TO THIS WAY OF WORKING, WE HAVE THE POTENTIAL TO ATTRACT A GREATER VARIETY OF CANDIDATES TO OUR TALENT POOL."

I'M A ONE-STOP BULK-BUY SHOPPER WHO GOES FOR QUALITY... IT'S CHEAPER IN THE END

Ibrahim Kareem is an SEO executive for an employment law consultant company in Manchester, UK. He also manages a blog (marketingknowhow.co.uk), where he offers beginner level marketing tips for individuals and small businesses.

The tissue and towel products I choose to use at home are ones that my mum used to use when I lived at home, so when I moved out on my own I carried on using those products as I was familiar with them. I normally use Charmin Ultra Soft, and I use Bounty kitchen towels for the same reason.

Although these products can be more expensive, I prefer to buy high-quality tissue products like these as they tend to be kinder to the skin. They're also more economical in the long run as high-quality products usually last longer than cheaper ones, so you save money as well as having a nicer product to use.

For these types of products, I don't have a preference as to whether they're environmentally-friendly or not. What is most important is the quality.

Following the outbreak of Covid-19, I count myself as one of the lucky ones because I haven't been affected by this... yet.

Just out of habit and to make grocery shopping more cost-effective, I tend to bulk buy a lot of my essentials such as pasta, rice, tinned tomatoes, soap, and tissue and towel. I went shopping just a week before this all went down and I bought two packs of 24 rolls of my normal brand of tissues and two packs of two rolls of my normal brand of kitchen towels.

I haven't been one of the people who has been panic-buying these past few months. I find the whole stockpiling of tissues because of this outbreak kind of absurd.

In "normal" times before the pandemic, I wouldn't usually buy tissue products online. It's for the same reason I buy my essentials in bulk. I'm never normally around the house during business hours and by the time I get back home the shops are closed and I'd have missed deliveries. So for that reason, every month or so I write a list of things I need and set time aside to go into town to get them and stock up.

I live in the city centre of Manchester in northern England, so there are a variety of local shops all around me, some local independent stores and also all of the big retailers all within equal distance of each other.

I've found that it's normally the same setup when I travel to countries within the EU. There's always some sort of one-stop-shop where you can find all of your essential toiletries including toothpaste, soap and of course tissues.

SEIZING THE OPPORTUNITY TO ADVANCE THE QUALITY SPECTRUM FOR AFH TISSUE

The hard hit Away-from-Home market is set to rebound, and is expected to be stronger than ever. Richard Cho, global marketing director at Solenis, says now is the time for innovation to targeting the sector's unique demands.

Richard Cho
Global marketing director, Solenis.

The Away-from-Home (AfH) tissue sector accounts for approximately one-third of the global market and has grown at a faster rate than the consumer segment over the past five years. Recent coronavirus-driven stay-home policies have created significant disruption to the tissue industry, especially in AfH channels. However, when the pandemic stabilises and economies reopen, this market segment should experience a strong resurgence with increased foot traffic in restaurants, office buildings, hotels and schools.

A renewed emphasis on hand hygiene in the wake of the global pandemic will result in more hand washing and hand drying occasions. In addition, we anticipate there will be a move away from jet air dryers in favour of increasing the number of paper towel dispensers in public restrooms. Due to these factors, the global market can expect a rising demand for better hygiene and sanitation products in commercial channels and increased consumption of AfH tissue.

Innovative Solutions: the time is now

The time is right for papermakers to both align current solutions with market demand for AfH products and to develop new innovations targeting this segment's unique needs. Yet many challenges can prevent mills from taking advantage of this opportunity. One challenge is a value chain in which the end user accesses the product free of charge (a restaurant patron is not charged for the use of paper table napkins). At the same time, there is less focus in the AfH segment on the delivery of ultra-premium label claims around softness and absorbency. This pushes tissue producers to hit certain quality standards and comply with sustainability goals and requirements but in the context of a highly cost-sensitive environment.

Solenis has a proven track record delivering innovations that address the evolving needs of tissue makers. For example, as the use of recycled fibres increased, Solenis introduced dry strength and contaminant control additives to help AfH tissue makers address issues related to fines management and stickies control. Now we have found a growing opportunity to deliver a new Yankee coating solution specific for AfH tissue making.

Introducing PRO Series Yankee Coating Additives

Solenis launched the Pro Series of Yankee Coating Additives to meet the essential needs of tissue mills making AfH products. With this family of products, even a cost-conscious tissue maker can achieve predictable and uniform creping performance. This improves the operational stability of the Yankee system and allows better control of sheet attributes and influence over key final properties, such as bulk, tensile and stretch. In addition, a PRO Series Yankee coating enhances the ability of tissue makers to protect their most valuable asset — the tissue machine.

Solenis' PRO Series of Yankee Coating Additives leverages complementary adhesive and release technologies to deliver the optimal coating for AfH tissue making. The PRO Series programme includes two technologies that work in concert in the Yankee system:

Crepetrol PRO creping adhesives draw

THE TIME IS RIGHT FOR PAPERMAKERS TO BOTH ALIGN CURRENT SOLUTIONS WITH MARKET DEMAND FOR AFH PRODUCTS AND TO DEVELOP NEW INNOVATIONS TARGETING THIS SEGMENT'S UNIQUE NEEDS. YET MANY CHALLENGES CAN PREVENT MILLS FROM TAKING ADVANTAGE OF THIS OPPORTUNITY.

upon our more than 60 years of rewettable solution expertise. These products are designed to provide durable film formation under a range of challenging moisture conditions. Product grades are available to deliver low-, medium-, or high-peak adhesion profiles and to enhance performance in a variety of operational environments, such as providing versatility under heavyweight or lightweight creping conditions and delivering excellent dryer protection with good doctorability.

PRO Series creping adhesives open the machine operating window by controlling adhesion between the tissue and the Yankee cylinder. They control both contact adhesion (initial adhesion to the Yankee cylinder press roll) and peel adhesion (adhesion at the creping blade) and provide a soft, pliable, workable film.

Rezosol PRO release agents deliver enhanced performance for a number of key variables, such as coating edge control, cross-direction (CD) coating uniformity and CD dryer uniformity across temperature and furnish conditions. They facilitate the release of the tissue web at the creping blade by intentionally interfering with the formation of the coating. They also lubricate and protect the blade from excessive wear.

Real-world results

With the delivery of PRO Series Yankee Coatings, Solenis has provided a total solution that helps AfH tissue makers across the world enjoy improved operational stability, environmental compliance and asset protection.

PRO Series Case History: Improved Stretch and Bulk

Challenge

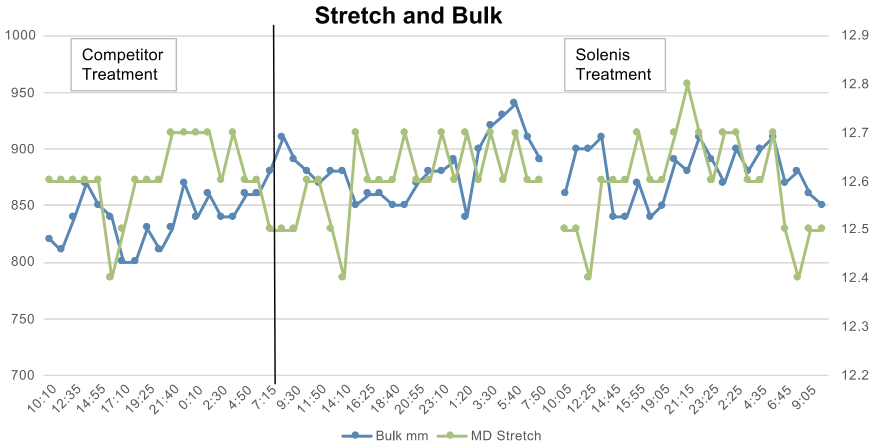
A customer operating an AfH tissue machine with a machine glaze (MG) cylinder and 100 percent recycled furnish was experiencing a wide quality spectrum. Solenis was already the supplier of the release agent, but a competitor was supplying the base coat — a low-cost, effective product. This combination was not providing the amount of stretch and bulk that the customer needed.

Solution

The experts at Solenis recommended developing a new coating package, replacing the incumbent adhesive with Crepetrol 9810, a PRO Series product available in Europe.

Benefits

The performance of Crepetrol 9810 matched the competitive treatment at a lower add-on level of both base and release. The customer's goal of both improved stretch and bulk was achieved, as well as a chemical cost savings of 15 - 25% per year.



PRO Series Case History: VOC Emission Reduction

Challenge

A customer's tissue machine produced a wide range of grades — from napkin to machine-glazed (MG) finish products using recycled fibre. This required a crepe release agent with strong release and lubrication properties, as well as cost efficiency. Additionally, new state legislations put the mill's volatile organic chemical (VOC) emissions under tighter scrutiny.

Solution

Solenis recommended Rezosol PRO 773, a new hybrid technology available in North America formulated with a blend of clean mineral oil and synthetic release materials. The synthetic release agent does not contain VOCs, helping the mill meet its air-permits regulations.

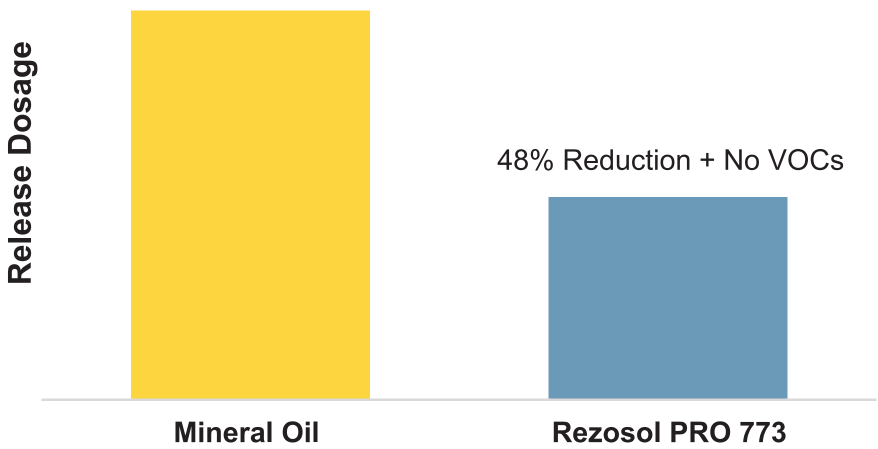
Benefits

With the switch to Rezosol PRO 773, the mill eliminated the VOC contribution of its crepe release application, a step towards its overall emissions goals. Additionally, the mill was able to achieve a 48 percent reduction in the use of release agent.

Part of a Comprehensive Portfolio

The PRO Series Yankee Coatings programme from Solenis is the latest offering in a long line of innovations developed specifically for tissue and towel producers.

This article was written for Tissue World Magazine by Richard Cho, global marketing director, Solenis.



KEMIRA'S NEW GENERATION FIELD TEST DUST AND LINT PARTICLE ANALYSER

An accurate field test to improve detection and measurement of dusting and linting during tissue production has major significance for cost and customer satisfaction. Kemira's Clay Campbell, senior manager global business development, Tiago De Assis, research scientist, Lucyna Pawlowska, senior application specialist, and Chris Nurse, assistant scientist, explain their product.

Sheet dusting and linting represent major areas of concern for tissue manufacturers. The various problems and concerns related to dusting and linting represent millions of dollars in additional costs during the manufacturing of tissue. These issues generally affect the safety, productivity, and manufacturing costs of paper making processes as well as the product performance and overall end-user satisfaction with the final product.

Dusting typically takes place at the tissue manufacturing and converting sites, generally at Yankee doctor creping processes, sheet rewinders, and converting/embossing processes. Dusting at manufacturing and converting sites leads to at least three areas of concern:

1. Safety/OSHA related concerns - generation of small air-suspended particles being breathed by operators
2. Fire hazard concerns - buildup of dust on equipment and ceiling rafters over time that can be a major contributing factor in fires and explosions;
3. Manufacturing cost concerns - frequent cleaning of manufacturing areas to remove and control dust and unexpected shutdowns caused by excessive dusting have a negative impact on process efficiency and carry cost for the producer.

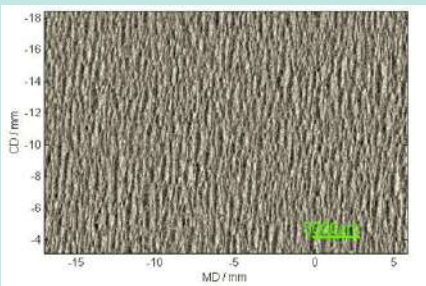
Linting, in some instances referred to as sheet linting, typically takes place at the point of end use when particles fall off the final product (e.g., facial tissue, bath tissue). During the use of bath tissue, lint can build up on the bathroom floors. When paper towels are used for cleaning, fine lint particles can be left on the cleaned surface. In the case of bath tissue, sheet pilling may occur when fibers (non-bound) roll up on the sheet surface. All these linting issues can often cause customer dissatisfaction.

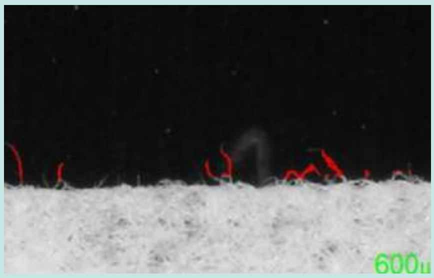
Currently, the paper industry has few options for tools that can be used for determining the quantity, or type of dust and lint particles that are dislodged from a product in the manufacturing site or by end consumer usage. The current existing options are often expensive, produce questionable result trends, and are not portable. As such, there is high interest and a significant need in the industry for improved dust and lint particles measurement methods.

Types of dust and lint particles include, but are not limited to: fibres, fines, starch, and ash. Fiber particles generally have the greatest length (approximately 0.2-3.5 mm in some instances) among all types of dust and lint particles and generally include hardwoods (e.g. eucalyptus, acacia), softwoods (e.g. Scandinavian pine, Southern pine), recycled (SOP, OCC). Fines generally include small particles, such as, parenchyma cells, other small cells and ribbon-like fiber fragments (approximately 0.2 mm in some instances). Moreover, it is generally understood that fines refer to cellulosic materials that are small enough to pass through a forming fabric. An industry-recognized method (TAPPI T261 - Britt Jar Fines) refers to fines as objects small enough to pass through a round holes having a diameter of 76 microns. Fines can have a significant impact on processing, particularly with regard to retention and drainage operations. Starch are particles that are generally of a length of about 1 - 10 μm and a width of 1.5 - 9 μm, and in some instances appear as platelet-like shapes. Ash particles are mainly represented by papermaking fillers and generally comprise a greater circularity and platelet surface area as compared to the other particle types.

The ability to have a field test method to accurately and repeatedly measure dust and lint particles provides significant advantages to users as well as the potential to save millions in costs for paper product manufactures.

KemView Gen II sheet analyzer (U.S. Patent No. 9,816,977) is an easy to use, fast response equipment, that can be used to assess sheet structure and identify and quantify dust and lint particles. KemView™ provides a diverse array of sheet measurements and can be effectively used as a laboratory and field support tool assisting in the diagnostics of paper sheets. KemView consists of a digital optical detector positioned at the top of the unit. Multiple LED light emitters illuminate the sheet sample. Analysis of a sheet sample is performed by simply placing the device on top of the sheet and clicking the analysis button. Images at several different sheet locations takes seconds with data easily





Left to right: *illustration of sheet crepe structure, photo of KemView™ Gen II portable unit, free fiber ends marked in red color* exported to excel for comparative analysis.

KemView is a novel image-based measurement tool that provides in depth 3D analysis of the sheet structure with the ability to easily measure the following parameters:

- crepe bar frequency and count
- crepe bar intensity and distribution
- sheet roughness
- pinholes
- number of free fiber ends (FFE)
- markings (sheet patterns from the fabric)

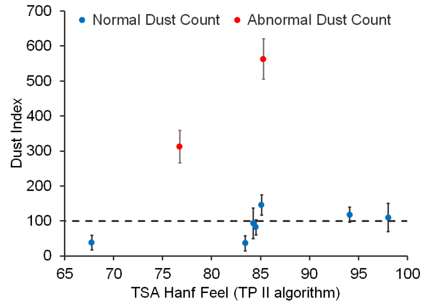
The KemView patent pending dust and lint measurement test not only can measure the total dust and lint particles but can also identify and quantitatively measure the subcategories such as; fibres, fines, ash and starch.

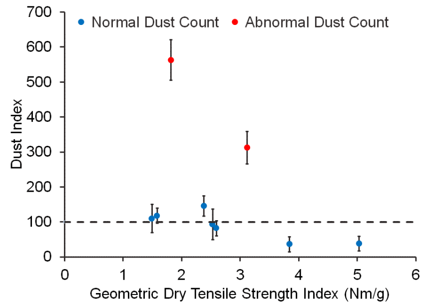
Typically bath and facial tissue products with high softness, low dry tensile strength, high eucalyptus fiber ratio, high recycled fiber ratio, low sheet moisture and high free fibre end count will have the greatest tendency for developing dust and lint.

The new KemView dust and lint test method greatly expands the overall KemView value. The combination of the dust and lint measurement with sheet structure analysis (e.g. crepe bar count, free fiber ends, pinholes) and basic tissue properties (e.g. strength, softness) represents a complete approach to identify the root cause of dust and lint problems, which helps with the more accurate selection of the best possible chemical treatment solution.

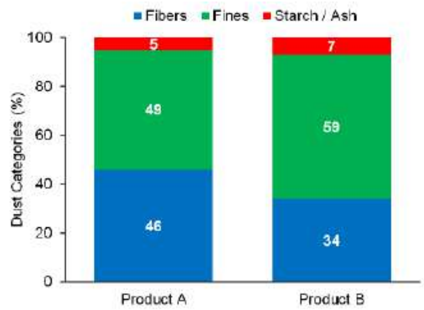
Figures 4 and 5 illustrate an example of the dust and lint measurement performed on a structured bath tissue product with very high dust count. The measurement was executed on both sides of the product (smooth side-500 and structured side-900 dust index). The green color represents dust and lint particles on a black background. A significant difference in dust count is observed between the smooth and structured sides. The structured side presents 80% more dust and lint particles than the smooth side. These levels of total dust are excessive compared to values usually observed for other structured products.

Figures 6 and 7 present a second example focusing on the relationship between dust and lint and basic tissue properties (e.g. softness, strength) for nine different bath tissue products. The dust count is represented by Dust Index (DI), which is an indication for the total dust count per area of product. Generally, softer and consequently weaker products have higher propensity to release dust and lint particles as it can be seen from the figures. Dusting and linting issues can potentially occur with a dust index greater than 100. Two products (red dots) are outliers presenting much higher dust index than the other products (blue dots). A third example, illustrated by Figure 8, further demonstrates how the new KemView dust and lint test method can be used to investigate the source of the dust and lint problem. In figure 8, both products (Product A -140 dust index and Product B -130 dust





Above: *Figure 6, dust index vs TSA hand feel for bath tissue products Figure 7, dust index vs dry tensile strength for bath tissue products*



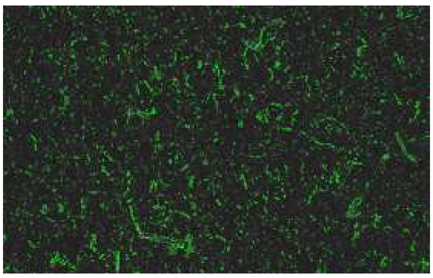
Above: *both products (Product A -140 dust index and Product B -130 dust index) are bath tissue samples presenting similar total dust index. However, the dust and lint released from Product 2 has a higher content of fines than Product 1.*

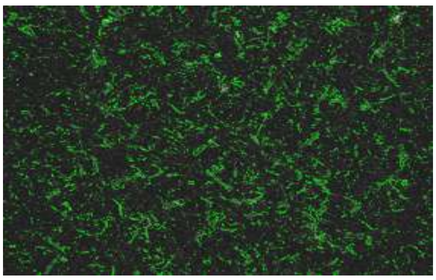
index) are bath tissue samples presenting similar total dust index. However, the dust and lint released from Product 2 has a higher content of fines than Product 1.

In summary, the KemView Gen II is a powerful tool to help paper producers to improve product quality, operation safety and production efficiency. The new dust and lint test method in combination with the sheet structure analysis provides in dept understanding about the root cause of product dusting and linting, which helps to identify the best approach to solve problem.

This article was written for TWM by Kemira's Clay Campbell, Tiago De Assis, Lucyna Pawlowska, Chris Nurse.

Possible causes that increase tendency for sheet dusting and linting		Chemical treatment options
• Low dry tensile sheet strength	• Low sheet moisture creping	• GPAM TWS or dry strength additive with less refining
• High refining	• High ratio of eucalyptus fibers	• Crepe control technology
• Aggressive creping	• High free fiber end count	• Sheet spray softener / Anti-stat
• No cationic polymers utilized to keep fiber, fines and filler contained in the sheet	• Electrostatic charge on sheet	• Cationic functional promoter
• Sheet picking at the doctor blade / pinholes in the sheet		





Figures 4 and 5: *an example of the dust and lint measurement performed on a structured bath tissue product with very high dust count.*

BAROMETER ISSUE: SPECIAL FEATURE

ONE YEAR ON… YOU REPORT BACK ON YOUR PROGRESS

Meeting a range of tissue industry professionals on-site and on their front-line is a crucial source of industry intelligence in judging local and international trends and strategies. In 2019, TWM visited tissue mills around the world including sites in America, Spain, Germany, Poland, France and the UK, for the magazine's Country Reports. Here, we revisit mills who have been in the headlines since to assess their progress.

Lucart Tissue & Soap: *Investments at the company's Arceniega (pictured) and Güeñes sites have reinforced its position on the Iberian and South France market*

RIGHT NOW WE'RE SUFFERING A DEEPER IMPACT FROM COVID-19 THAN WHEN WE WERE UNDER A STATE OF EMERGENCY. SO THE DOMESTIC MARKET TENDS TO STABILISE AND THE SANITARY PRODUCTS DEMAND IS DECREASING DUE TO THE IMPROVEMENT OF THE SITUATION, AND THE HIGH STOCKS ACHIEVED DURING THE EMERGENCY AND HORECA CHANNEL IS REACTIVATING VERY SLOWLY.

SPAIN

LUCIANO LOPEZ, PLANT DIRECTOR AT LUCART TISSUE & SOAP

TWM/1: What machinery investments have you made since we met and why?

"Since the last time we met, we have completed the industrial and toilet paper lines movement from the Güeñes facility to Arceniega's. Additionally, we have installed a new industrial rolls line at our Arceniega facility and renewed the end of line of all the lines including AGV vehicles moving finished products from lines to the warehouse. All these investments are included in the strategic plan of the company reinforcing Lucart's position on the Iberian and South France market."

TWM/2: How has your local tissue market changed/developed in the past year? What impact has Covid-19 had on local tissue trends?

"Curiously, right now we're suffering a deeper impact from Covid-19 than when we were under a state of emergency. So the domestic market tends to stabilise and the sanitary products demand is decreasing due to the improvement of the situation, and the high stocks achieved during the emergency and HoReCa channel is reactivating very slowly due to the fact that the standard situation is not expected to be recovered in a short period."

TWM/3: What key challenges has your company experienced in 2020/2020, and how have you responded?

"The impact of Covid-19 on activities was hard, but mainly in a different way as most industrial companies in the region were affected. First, we had to react very quickly and accurately, as demand increased significantly, and all health and safety protocols had to be implemented in an extremely short period of time. After that, we were forced to adequate progressively our production capacity in order to adapt to the high variability we've been suffering during the last months up to now."

TWM/4: And the key opportunities?

"The main opportunity is linked to the fact that the Covid-19 crisis has increased the attention of the public's opinion to hygiene issues, mainly in AfH contexts. Particularly, hands hygiene has been demonstrated to play a key role in containing the pandemic. At this purpose, as an integrated producer of hand towels, soap and hydro-alcoholic gel, Lucart can offer a complete set of solutions for any professional operators willing to guarantee the highest level of hygiene for its customers and employers in the different sectors, from healthcare to HoReCa, from schools to offices."

Integrated producer: *Lucart offers a complete set of solutions that it says guarantee the highest level of hygiene*

UNITED KINGDOM

ARMINDO MARQUE, PARTNER AND TECHNICAL DIRECTOR, POPPIES EUROPE

TWM/1: What machinery investments have you made in the past year and why?

"With the continued trend in the UK for sustainable products we have seen a continued rise in demand for our 'eco' range of disposables. As such we have developed a new brand 'happy tree' which we offer in a full range made from 100% recycled unbleached tissue. This has led us to invest in another high output napkin production line form Omet coupled with a Multipack wrapper. We have now 17 of those lines.

"In our hygiene section we have revamped the end of lines with new energy efficiency wrappers supplied by IFP. And for our tabletop side, due to winning new 'retail' business we have recently taken delivery of a large format RCM table cover machine."

TWM/2: How has your local tissue market changed/developed in the past year?

"Pre Covid the market was good, the demand was strong, and we have had an excellent market penetration with several new brands aimed at different segment of the napkin market (happy tree, cloud9, Popin).

"Nevertheless, we could already see some signs of the hospitality market toughening up, especially in the Casual dining dominated by big chains of restaurants. Private equity has led the fast development of the sector for many years with a characteristic high leverage debt structure format.

"So when the margins have been squeezed by a post-Brexit increase in labour cost and a jump on business rates the sector tanked and their tissue demand started to shift. Covid-19 has precipitated this restructuration with large and famous restaurant chains having to size down or disappear but the root causes were already there."

TWM/3: What key challenges has your company experienced in 2020/2020, and how have you responded?

"Covid-19 has overshadowed all the other usual challenges of our industry. The AfH market dramatically changed in March with the mandatory closure of the hospitality industry in the UK due to the pandemic.

"We had our eyes on the rest of Europe and we were bracing for impact. Lock down! Demand for the normal standard range we offered stopped overnight! After the initial craze for the hygiene products (toilet tissue and towel) when we pumped has much tissue as we could to meet the orders our operation slowed down to almost idle.

"We had to review our operation develop new products and adapt to the situation. Now those restrictions have lifted and we are seeing a surge in demand and expect to be back at normal levels within 12 months."

TWM/4: And the key opportunities?

"There are always opportunities even when you are faced with falling demand. Poppies has diversified and entered new markets for example we now produce disposable salon and spa towels as these have become a requirement. The new norm brings new demands with it.

"Companies that can focus on new product development and have flexibility within their manufacturing will be able to grab the opportunities that present themselves over the coming months."

Innovation: *Poppies Europe has developed a new brand – 'Happy Tree' – which is made from 100% recycled unbleached tissue*

L.C.Paper's site in Besalú, Spain: *a key strategy for the company is to intensify e-commerce*

JOAN VILA, CHIEF EXECUTIVE, L.C. PAPER, SPAIN

TWM/1: What machinery investments and developments have you made since over the past year and why?

"In 2020, we started several investments in machine two that are currently being finished. We modified the pulp circuit before the paper machine with a new 26 "refining, and with three tanks to perform a hybrid refining with enzymes. We have also introduced a new 500kW centrifugal vacuum pump. In the waste water treatment plant, we built a 1,000m3 aerobic treatment reactor and a sludge dryer that will allow the sludge from the treatment plant to be burned in the biomass boiler."

TWM/2: How has your local tissue market changed/developed in the past year?

"The market evolves very slowly to any change. But Covid-19 has completely sunk the AfH market, both in the local and international markets, which requires drastic measures such as product changes or reduced production."

TWM/3: What key challenges has your company experienced in 2020/2020, and how have you responded?

"Covid-19 has boosted the e-commerce market where we were already present. The demand for plastic-free packaging is also increasing, which the market is trying to resolve: first by introducing sealed paper on both sides, a path that does not continue due to the breakage of packages in supermarkets. Second with the introduction of bio-plastic, an expensive product. Third with cardboard packaging, a solution that our company has carried out since 2017 and continues to develop. Regarding the drop in pulp prices, it is excellent news to have dropped from €655 per tonne to € 400 per tonne, but the risk is to create a scenario in which the price rebounds to €745 per tonne as it happened in 2010. The best scenario for the industry is that of stability and keeping it within a range between €440 and €550 per tonne."

TWM/4: And the key opportunities?

"The current moment, as in all crises, allows new opportunities. Our strategy is to intensify e-commerce with the management of the most sustainable tissue on the market for sale, with the lowest CO2 emissions, with more metres per roll, with cardboard and with unbleached pulp."

Cardboard packaging: *L.C. Paper has produced such products since 2017*

AYAZ TEJANI, MANAGING DIRECTOR, LEICESTER TISSUE COMPANY (LTC), AND FRANK MILLWARD, LTC SALES AND MARKETING DIRECTOR, UK

TWM/1: What machinery investments have you made in the past year and why?

Tejani: "We are now five years into a 10 year x £130m investment programme. In the last 18 months alone we have added two new PCMC converting lines to meet our rising customer demand (taking our current machine count to four) at our Thurmaston site in Leicester, increasing our capacity by a further 20,000 tonnes. To accommodate further storage of finished goods and raw materials we have added 115,000 square feet of new warehousing at two new sites – Penfold and Leicester Park. This additional space has helped us through the Covid-19 crisis – and will do so again as we now prepare for Brexit.

"The Leicester Park development is particularly important to us as it will provide a springboard as the home for our first paper mill in 2022."

TWM/2: How has your local tissue market changed/developed in the past year?

"The past year can be clearly split into ... pre/during and post Covid-19! The impact of the crisis has had a massive impact on consumer shopping habits and behaviours. Basket spend is up but frequency of purchase is down. We are seeing a trade into larger pack formats. Some retailers have been better placed to manage the crisis than others."

TWM/3: What key challenges has your company experienced in 2020/2020, and how have you responded?

"We had an exceptionally good year in 2019 and we saw significant growth in both our branded and retailer branded business. Fibre prices began to stabilise after a very volatile period and the market has been keen to embrace new ideas and innovation. 2020 has been defined by Covid-19 on several levels. As the UK went into lockdown we saw an unprecedented demand spike as shoppers began to 'panic buy'. Supply chains were under extreme pressure to meet this demand. At LTC, we managed this time well and our stock levels of both finished goods and raw materials kept pace. We were fortunate that our fourth new converting line had just been commissioned and so we could not only meet the requirements of our existing customer base but were also able to assist with the requirements of new customers. We protected our service level despite a 200-300% uplift."

Frank Millward, LTC sales and marketing director added: "It was very strange. My mobile was red hot with calls from the media and the press. Is seemed like the whole world wanted to come and see the inside of a toilet roll factory! And almost every retailer in the land was looking for help

"As we move into the 'new normal' it is clear that those suppliers that are prepare to be flexible in adapting to the new changing market and trends will fare best. The same is true of the retailers. Kantar data shows that those who were positioned best at the start of the crisis have gained share – those with a strong online presence in particular – and those that have adopted a "safety first and trustworthy "shopping environment have become the destination stores. We are approaching a new recession and we all expect that this will be deep. At these times history has shown us that certain rules apply (albeit these may now well be different as this will be a recession "in Covid"). The market will polarise between value and premium – but value (not just retail price) will remain key."

LTC's Leicester, UK-based site: *the company is five years into a 10 year x £130m investment programme*

TWM/4: And the key opportunities?

Millward: "These new trends sit well as opportunities for LTC. Our manufacturing capability is very broad and we put innovation and NPD at the front of our market facing offering. Combine this with our low cost and overhead base and it is clear why we continue to grow at such a pace."

Tejani: "We will continue to offer what the market and shoppers want. That is key for the business. Our new product launches in the environmental sector with Bamboo and Paper Packaging demonstrate this. We will continue to grow and in doing so we will continue to invest. Our first paper mill is in the plan for 2022 and the second for 2025. In this industry – to stand still is to lose!"

Above: *LTC chairman and chief executive Amin Tejani, and his son Ayaz, LTC managing director*

AMERICA

STEVE PETERS, SALES AND BUSINESS DEVELOPMENT MANAGER, BEDFORD PAPER

TWM/1: What machinery investments have you made in the past year and why?

"We have active plans for a construction of a new +250,000 sq ft building and the addition of two new state of the art converting lines with full automation. Our intent was to start construction in late 2020 and a completion late in 2021. With the current concern for the Covid-19 pandemic and impact on both the AfH and At-Home markets we have decided to temporally put these plans on hold. We are still actively working on details of this plan and intend to resume in early 2021 with completion in 2022."

TWM/2: How has your local tissue market changed/developed in the past year?

"Our business model has a diverse portfolio supporting both the AfH and At-Home markets. While one is very strong the other has been impacted by the shutdown of offices, schools and other AfH related businesses. We fully anticipate the market will rebound but also expect it to look different."

TWM/3: What key challenges has your company experienced in 2020/2020, and how have you responded?

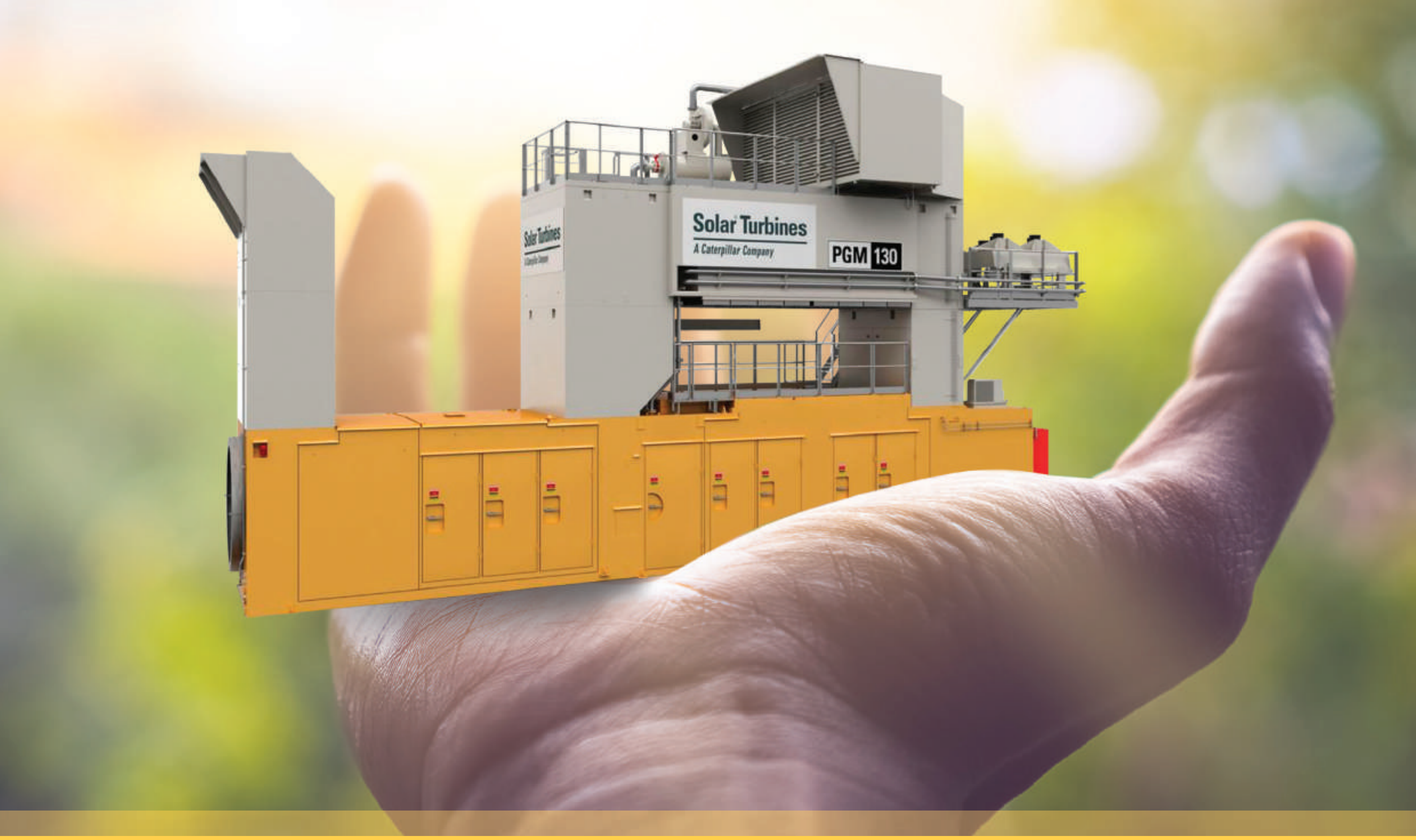
Bedford Paper: *the company's business model has a diverse portfolio supporting both the AfH and At-Home markets*

"With no doubt the Covid-19 has had the major impact on demand and materials. The challenge we all will have to manage to is what the 'new norm' will be not just from a product standpoint but also how we manage materials, administrative support, working with customers, scheduling of production and personnel."

TWM/4: And the key opportunities?

"Flexibility and responsiveness."

EXPERIENCE
CO2 Reduction savings



Sustainability at your fingertips

+20 YANKEE HOOD APPLICATIONS

+350 GAS TURBINES IN PULP&PAPER

+40% CO_2 AVERAGE EMISSIONS REDUCTION IN CHP APPLICATIONS

>30% COST SAVINGS ON UTILITIES BILL

Contact us.
for more information and to locate the office nearest you:
visit solarturbines.com;
Call +41 91 851 1511 (Europe) or +1 619 544 5352 (US)
email infocorp@solarturbines.com

Solar® Turbines
A Caterpillar Company

RECOVERED PAPER SUPPLY – ALREADY IN DECLINE – HIT HARD BY THE PANDEMIC

New sources of recovered paper for the recycled tissue industry must be found, say Bill Moore and Susan Cornish of Moore & *Associates*. Here they analyse the long-term trend, and consider potential answers.

Bill Moore
Moore & Associates

Susan Cornish
Moore & Associates

Although the global use of recycled fibre as a percentage of tissue/towel mill furnish has peaked, recovered paper (RCP, also known as PfR [paper for recycling in Europe]) is still an important raw material for the sector. Figure 1 shows the fibre sources used by the world's tissue mills over the last several decades. Since peaking in the year 2000 at about 50%, recycled fibre (RCF) use has declined slowly to the current level of 35%. RCF is being primarily replaced by chemical fibre pulp. This decline in RCF usage by the tissue sector can also be seen in Figure 2 which shows the global usage of RCP by paper and board product grade. In 2008, tissue grades consumed 16.6m tonnes of RCP (8% of world usage) and this dropped to 15m tonnes by 2018 (6% of world usage).

The decline in RCF usage is primarily caused by changes in the available supply of the RCP grades relevant for tissue manufacturing. Printing & Writing papers (P&W) are the primary source of RCF for tissue/towel production. Figure 3 shows the global consumption of P&W papers and tissue grades over the last twenty years. From its peak in 2007, global P&W paper consumption has declined from 119.4m tonnes to 98.4m tonnes in 2018. During that time frame, global tissue consumption increased from 26.9m tonnes in 2007 to 39.2m tonnes in 2018.

When recovered, P&W papers account for a substantial share of a statistical grade called deinking high grades, or DHG. The

Figure 1: Recovered Fiber Declining in Tissue

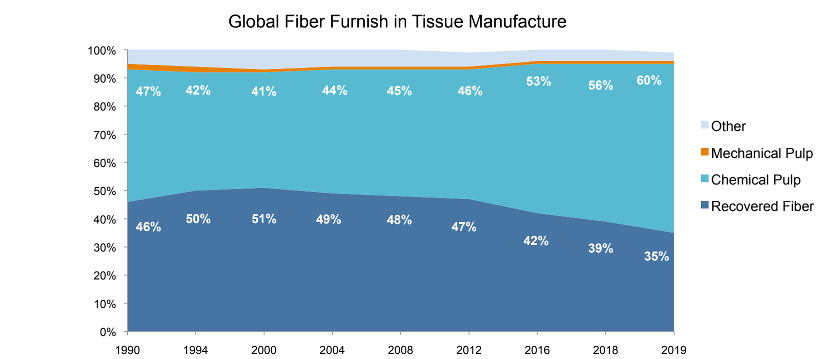


Figure 2: Global RCP Usage by Product Grade

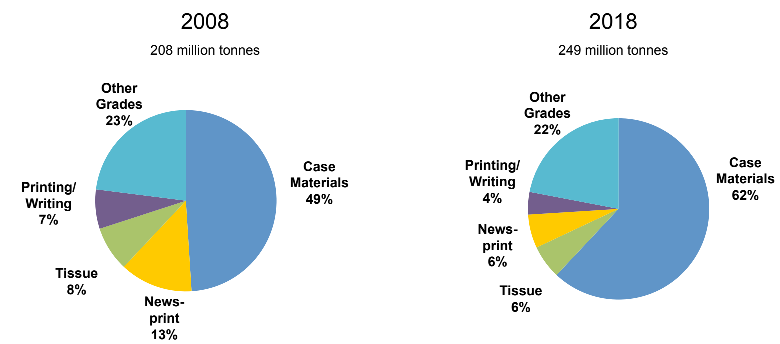
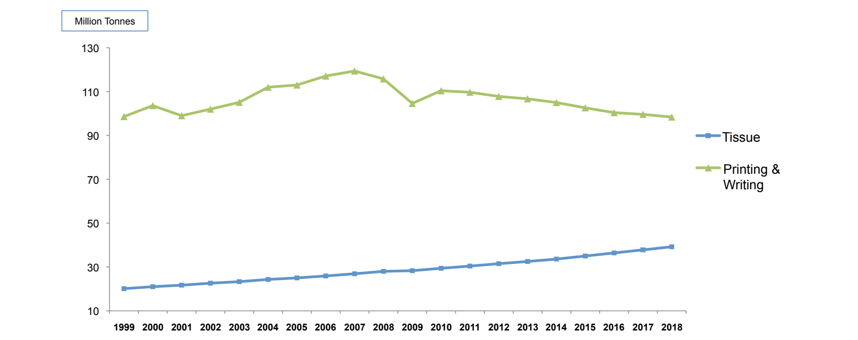


Figure 3: Global Tissue Consumption Growing as P & W Declines



NOTE: Not all tissue is produced from recycled fiber.

IN NORTH AMERICA, DEMAND DROPPED AN AVERAGE OF 10.5% PER MONTH FROM JANUARY THROUGH MARCH AND AN AVERAGE OF 36.8% PER MONTH OVER APRIL AND MAY. GIVEN THE SLOW REOPENING OF BUSINESSES,

world's primary sources of DHG are North America and Europe where developed economies imply more 'knowledge workers' who are the heaviest users of P&W paper grades. Uncoated Freesheet (UFS) is the largest product category within P&W papers, and in both North America and Europe demand has declined significantly in the past five years. UFS demand dropped an average of 4.6% annually from 2015 through 2018 in North America, followed by a steeper decline of 12% in 2019. In 2020 with the emergence of a global pandemic and the closure of offices, stores, schools, public services and the like, steeps declines have continued.

In North America, demand dropped an average of 10.5% per month from January through March and an average of 36.8% per month over April and May. Given the slow reopening of businesses, we expect the decline in UFS demand in 2020 to be significant but for the rate of decline to slow somewhat in 2021.

For tissue produced from RCF, the cost of RCP is a significant component of overall production cost. Not all tissue brands/products use RCF and the percentage that do varies considerably by region, with North America (US, Canada, and Mexico), Europe, developed Asia (Japan, Korea, and Taiwan), and the Middle East having the greatest use of RCF. RCF is predominately used in Away From Home products.

Much of emerging Asia's new tissue capacity, particularly China (but also Indonesia and others), and a substantial amount of Latin America's tissue capacity, is based on virgin fibre. Because of China's small role in the global DHG market, the country's significant decrease in RCP imports have had minimal effect on DHG markets in contrast to major impacts on the global OCC and Mixed Paper market.

The largest grade within DHG is Sorted Office Paper (SOP), followed by the ledger grades and Coated Book Stock (CBS). Traditionally, the sources of these grades have been office recycling programmes and printer scrap. Starting in the late 1990s, the rapid growth of confidential document destruction and office paper shredding led to strong growth in the volume of available SOP. This market trend was the result of both privacy and legislative/regulatory developments in certain regions, primarily North America followed by Europe.

While banks, governments, and insurance companies had always shredded their records, the new laws increased document destruction significantly. But the document destruction business is now declining with the move away from hard copy records. Another large source of DHG, the postal services of the world, have been declining in the developed economies as electronic communications replace hard copy mailings.

The other major source of DHG, the printing industry, has also been on a steady downturn in the developed world for some time. While the global recession of 2008/2009 caused a downturn in all paper production, the P&W papers and printing sectors declined dramatically. This was not only due to the recession but also a structural trend of producing/printing fewer hard copy documents, which continues to this day.

The overall trend will constrain the supply of DHG going forward but in the short term, the pandemic has exacerbated the slow decline of the printing industry. In the US, the trade press reported many cancelled print runs in April and May and advertising spending more broadly is expected to decline as much as 13% in 2020.

While tissue is the largest user of DHG, there are several other users of DHG including production of P&W papers with recycled content, and freesheet deinked market pulp. The use of DHG in RCF-based P&W papers is limited to several areas of the world, primarily the United States, with some in Western European countries and in India. DHG is used little in P&W papers because the high yield losses in the deinking process make it relatively uneconomical. In comparison, DHG has been an economical fibre source for Away From Home tissue, the reason usage has increased for several decades.

The production of freesheet deink pulp and its use in P&W papers is declining as

Figure 4: US Deinking High Grades Demand

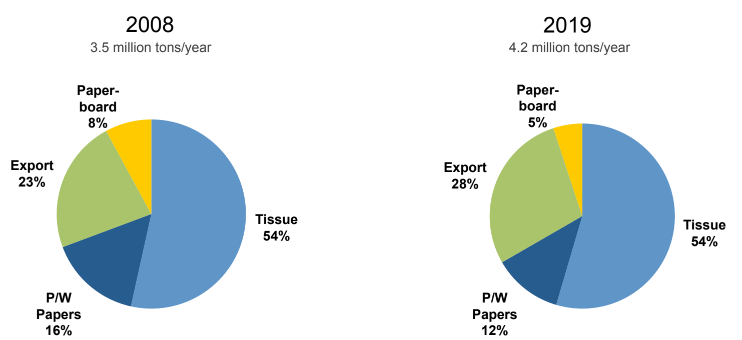
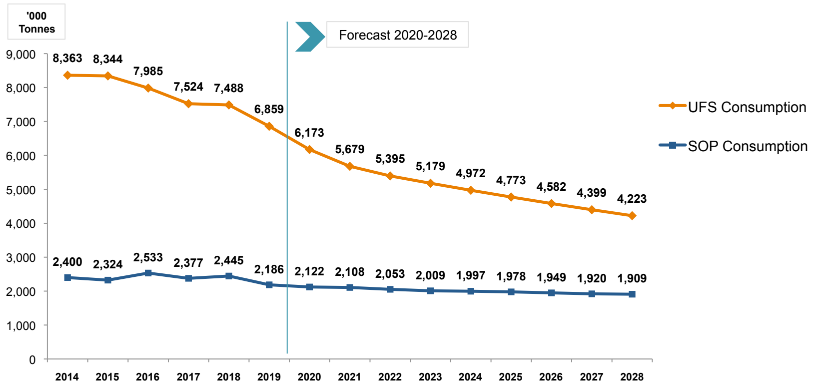


Figure 5. North American UFS Declining Faster than SOP



overall production of the P&W product grades decline. Figure 4 shows the decline in the use of DHG by the other sectors and consolidation of use in tissue products.

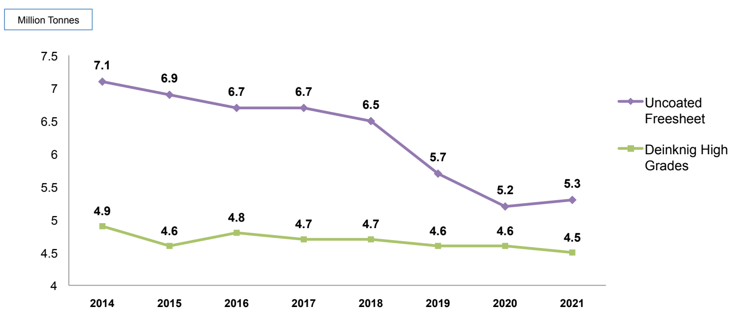
A major problem with the supply of DHG is obvious: the use of P&W papers in the developed economies of the world is declining rapidly which constrains the supply of DHG available. With limited growth in the use of P&W papers in Asia, Eastern Europe, and several other regions, the decline in North America, Western Europe, and Japan will more than offset this new available supply.

The developing and emerging countries of the world are not increasing their use of P&W papers as they 'skip' hard copy documents and move directly to electronic communications.

At the same time, tissue mill yields on SOP have declined because quality of the grade is dropping. This results in higher processing costs and an increase in SOP cycle costs (until the last low price cycle, 2019). In addition, reasonably priced virgin fibre pulp such as BEK is readily available, providing tissue mills with a good alternative.

The situation is similar in Western Europe as shown in Figure 6. UFS, which accounts for a significant share of P&W papers, is declining at a fast pace relative to DHG. Over the time frame of 2014 to 2021, UFS

Figure 6: Western Europe UFS vs. DHG Consumption



usage in the region will decline 1.8m tonnes while DHG demand will decrease by only 0.4m tonnes.

In Germany, prices for Multi Printing (3.10), two DHG grades used by the tissue sector, reflect this gradual decline in supply. After averaging around 200 euros/tonne through 2016 and through February 2017, prices grew steadily to the 270 Euro/tonne range by the middle of 2018, where they stayed for all of 2018. Figure 8 shows the steady decline in pricing in 2019, followed by a more recent upward price movement in 2020.

Figure 8 shows longer range US average SOP pricing from the year 2000 through 2019. It should be noted that the global RCP and DHG markets move together, differentiated only by transportation costs to the end user and currency values. There are several key takeaways from pricing trends:

- The 2011 peak of almost $250/tonne for US SOP and the 2018 German Multi Printing average price of 270 euros/tonne represent a good upper bound price for the market going forward
- The bottom cycle pricing of $90/ton in 2001, $110 in 2005, $135 in 2009, and about $145 for 2013 – 2016 (a long trough!) shows a progression upward that Moore *& Associates* believes will continue. This upward movement of

AT THE SAME TIME, TISSUE MILL YIELDS ON SOP HAVE DECLINED BECAUSE QUALITY OF THE GRADE IS DROPPING. THIS RESULTS IN HIGHER PROCESSING COSTS AND AN INCREASE IN SOP CYCLE COSTS (UNTIL THE LAST LOW PRICE CYCLE, 2019). IN ADDITION, REASONABLY PRICED VIRGIN FIBRE PULP SUCH AS BEK IS READILY AVAILABLE, PROVIDING TISSUE MILLS WITH A GOOD ALTERNATIVE.

Figure 7: Germany Multi-Printing (3.10) Price

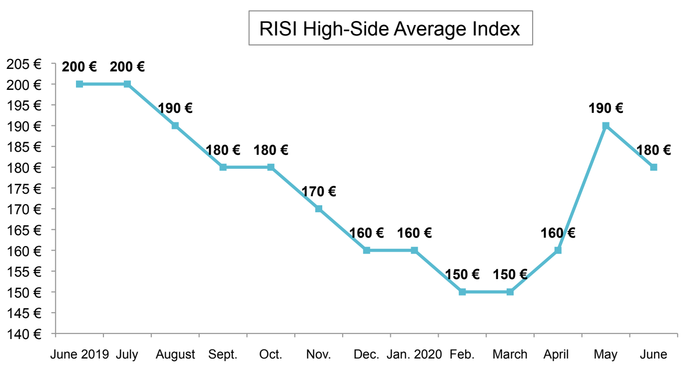
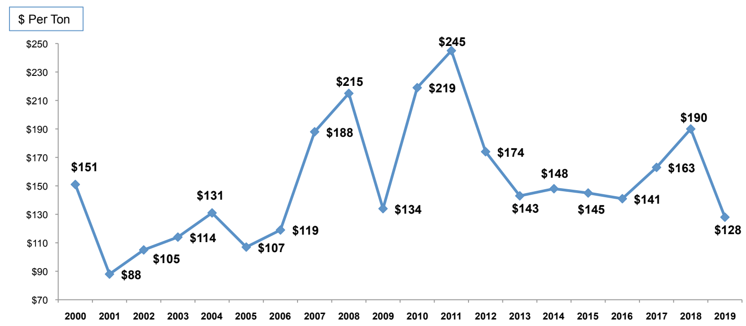
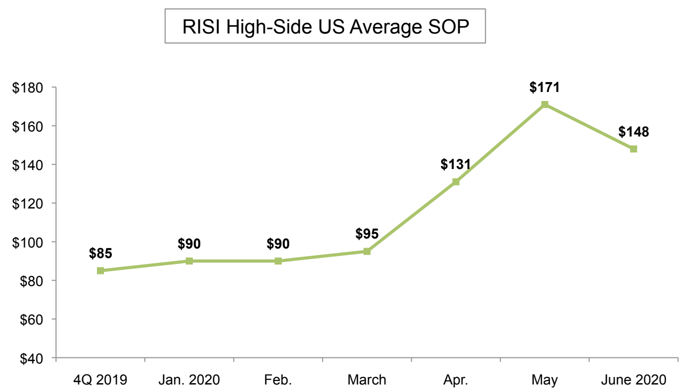


Figure 8: Long Term Average North American Baled SOP Price



the bottom cycle pricing was reversed in 2019 – which in a number of ways was an anomalous year for SOP. This is a classic characteristic of 'supply limited' RCP grade. Expect future bottom cycle prices to increase $5 to $10/tonne in each of the next several pricing cycles.

Figure 9: Recent Baled SOP Prices



WITH A CONSTRAINED AMOUNT OF P&W PAPERS GOING INTO THE AVAILABLE SUPPLY, NEW SOURCES OF RECOVERED PAPER FOR THE RECYCLED TISSUE INDUSTRY MUST BE FOUND. POTENTIAL SOURCES INCLUDE POST-CONSUMER BLEACHED PAPERBOARD PACKAGING (BOTH POLY COATED AND UNCOATED), POSTAL MAIL, CUTTING OF BOOKS, SILICONE RELEASE PAPERS, AND GREATER USE OF PULP SUBSTITUTES.

A variety of factors have recently driven the SOP market. Panic-buying and stock-piling of tissue products in spring 2020 occurred as offices closed and the use of UFS, and hence supply of SOP, dwindled. As Figure 9 shows, this resulted in significant SOP prices increases in April and prices remain high through June. With reduced SOP supply and prices spiking upward, substitution of virgin fibrebecomes more attractive and tissue mill demand for SOP slowly moves downward.

As consumers become accustomed to the 'new normal' and impacts of the recession are felt by greater numbers, we expect consumer demand for tissue products and tissue production level to return to normal levels. Despite this, the ongoing structural decline in UFS usage and SOP supply may allow higher prices to hold for some time.

Coated Book Stock (CBS) and Printers Mix, the other key DHG grades used by the tissue sector, have many of the same supply and demand characteristics as SOP. High quality book printing (which generates CBS) after a steady decline, appears to be stabilizing. On the demand side, the tissue sector has reduced the usage of this low yield grade through process changes and higher levels of coated paper in SOP. Because of the demand decrease, CBS, which for decades traded at prices of an average of 120% of SOP, has been on par with SOP for the last five years and is expected to remain at that level going forward.

While we will always have peaks and valleys in commodities like DHG, the overall trend line for pricing over the next 10 years is upwards. DHG prices, however, are bounded by the costs for bleached hardwood and eucalyptus pulp as they can be readily substituted for recycled fibres if prices reach levels that are uneconomical. In the second quarter of 2020 we did see an increase in the use of virgin pulp by recycle mills as SOP prices reached high levels.

With a constrained amount of P&W papers going into the available supply, new sources of recovered paper for the recycled tissue industry must be found. Potential sources include post-consumer bleached paperboard packaging (both poly coated and uncoated), postal mail, cutting of books, silicone release papers, and greater use of Pulp Substitutes.

It is our expectation that more of these grades will be recovered and used by the tissue sector.

Some of the hurdles include: collection infrastructure for the post-consumer SBS grades, high mechanical fibre content of postal mail, and a return to cutting of books. Prior to the 1990s, cutting bindings and covers off books was very common. With higher labour costs, safety issues, and higher Mixed Paper prices, this practice was significantly curtailed. With higher prices for ledger grades and lower Mixed Paper prices, will book cutting come back? There are now some highly automated book cutting systems that improve safety and reduce labour costs.

The growing brown napkin/towel business is based primarily on Old Corrugated Containers (OCC), but we are seeing increased usage of the RCP grade Mixed Paper also in these products.

Brown products, particularly napkins, are being favoured by many cost conscious restaurant chains, not only because of price but also because consumers often see brown napkins as more 'environmentally friendly' products. We are currently seeing a surge in OCC prices primarily because of the lack of supply from the shutdown/curtailed retail and commercial sector.

Going forward there is very large new demand for the grade as it is the fibre source of choice for corrugated box production. The good news is that the supply of corrugated boxes is growing, very much related to increased e-commerce consumer purchasing. Mixed Paper after a price slump in 2018 and 2019, which saw negative pricing for the grade, has recovered somewhat in 2020, with OCC prices rising sharply.

While Mixed Paper may not return to negative pricing, it has the lowest recovery rate of the major RCP grade categories, so supply is plentiful. The challenge is the mixed fibre and contaminants found in this 'catch all' grade.

The other area seeing renewed activity as a fibre source for tissue manufacturing is non-wood pulps: bamboo, bagasse, wheat straw, grasses, and other agricultural residues. Most of the action on these sources of fibre is still in its infancy, but consumer interest in 'greener more sustainable' products may be an important driver here.

As the global recovery rate for all RCP grades increases, it is inevitable that overall quality is declining. Two factors contribute to this: the 'next tonne' of recovered material is usually more contaminated than the last, easy-to-get tonne, and collection systems become more varied as volume increases.

While this has affected the low grades of RCP more than DHG, the tissue sector has also seen quality decreases in much of their RCF supply. There is a move to better measure and control RCP quality in many parts of the developed world, with Europe leading the way.

AS THE GLOBAL RECOVERY RATE FOR ALL RCP GRADES INCREASES, IT IS INEVITABLE THAT OVERALL QUALITY IS DECLINING. TWO FACTORS CONTRIBUTE TO THIS: THE 'NEXT TONNE' OF RECOVERED MATERIAL IS USUALLY MORE CONTAMINATED THAN THE LAST, EASY-TO-GET TONNE, AND COLLECTION SYSTEMS BECOME MORE VARIED AS VOLUME INCREASES.

These systematic and sometimes real time measurements not only contribute to better being able to monitor and control RCP quality, but for the tissue sector, they may play an important role in the fibre recipe and process operation adjustments based on changing RCP incoming quality and composition. The most sophisticated of these RCP measurement systems can accurately measure full bales for moisture, plastics and other contaminants, ash, mechanical vs. chemical fibres and even brightness.

In conclusion, all businesses face challenges as conditions change in their markets. The sources and usage of recycled fibre in the tissue sector presents some significant issues that the industry is working toward meeting.

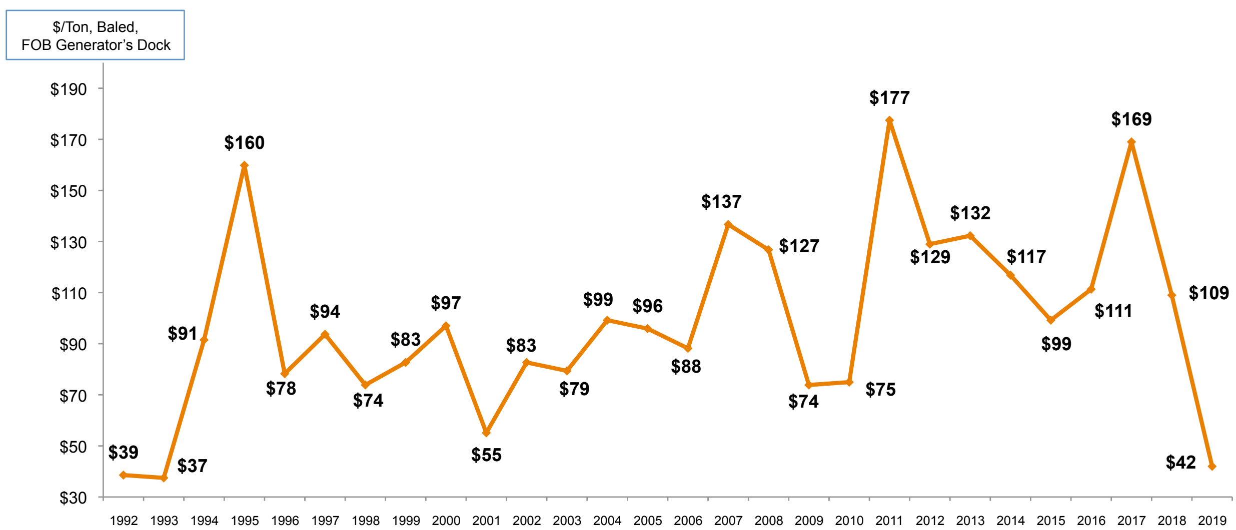
As the use of Uncoated Freesheet office papers and the supply of SOP diminish, production of packaging is increasing generally, creating more SBS scrap. Both SBS scrap and mechanical fibre grades such as magazines and coated groundwood sections are being used more in tissue production, however growth in this area does not counteract the decline of SOP.

In general, SOP and CBS supply will continue to decline for the next ten years but will hit the practical minimum after that.

With the acute short-term downturn in SOP supply as a result of the pandemic, short term SOP and CBS market prices are very strong. Demand for SOP will be modest as the industry shifts toward virgin fibre over the long term.

Higher bottom cycle prices for SOP and CBS can be expected with limits on top cycle prices due to virgin pulp substitution – except when pulp prices trend upward.

Figure 10: Average Annual North American OCC Price



ADVERTISER'S INDEX

TWM
TISSUE WORLD MAGAZINE

SUBSCRIPTION

Tissue World magazine is free to qualified members of the tissue industry. Please visit the following link to subscribe: https://www.tissueworldmagazine.com/TWMagazineSubscription.

Products for tissue production
Fabrics, roll covers, services

Voith provides a complete package of forming, press and structured fabrics perfectly matched to their roll covers and press sleeves, especially for the unique requirements of tissue production.

Voith's local experts deliver support for the highest efficiency. Rounding out its capabilities as a full-line supplier, Voith offers products with safety in mind, along with assistance and support through On-Site Services tailored to the needs of tissue applications.

Product overview
- UpElement add-on product for fast tissue press felts start-up
- TerraDry H product family for Yankee Cylinder coatings
- On-Site Yankee Service solutions
- ProTect for safe press felt measurements
- SolarSoft polyurethane roll cover especially for tissue machines

voith.com/fabrics

VOITH
Inspiring Technology for Generations

TISSUE TREBOR

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

Your most reliable source for parent rolls of tissue since 1972.

NEED TISSUE?
Come to the leader.

Trebor Provides:
- The Largest Source of Supply
- Competitive Pricing
- Expert Market Knowledge
- International Expertise
- Responsive Customer Service

When you think tissue...
think Trebor.

Tissue World Miami Booth #D60

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