

WET Tissue

Issue 35 • 2017

**ON AND
AROUND TISSUE**

Focus on:

Fameccanica's INNOVISION MACHINE

Senning's wrapping machines

GDM's Option Zero

**St. Croix Tissue:
a success story**

INNOVISION MACHINE

The more We Innovate, the more You Save

LESS
ENVIRONMENTAL
IMPACT

SAVING
PER YEAR
1,5 MM€ *



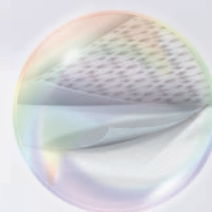
Glueless™ Cuff



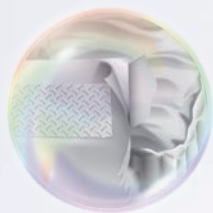
Fluffless Core



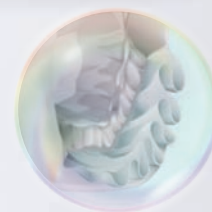
Fameccanica Lamination System (FLS) with integrated tape



Glueless™ ADL



Glueless™ Frontal Tape



Glueless™ Leg Elastics & Narrow Poly



Intermittent SAP & X-THRU Core Control System

A DIAPER MACHINE CONCEPT with excellent performance levels and high quality products for End Users. The **seven features** of the machine provide new solutions for raw materials and innovative combinations of ultrasonic and thermo-bonding technologies. Together they contribute to reducing Environmental Impact and allow significant Cost Saving.

(*) Estimated Saving for each Fameccanica machine FA-X P10 at 1000 ppm with the «Innovation features»



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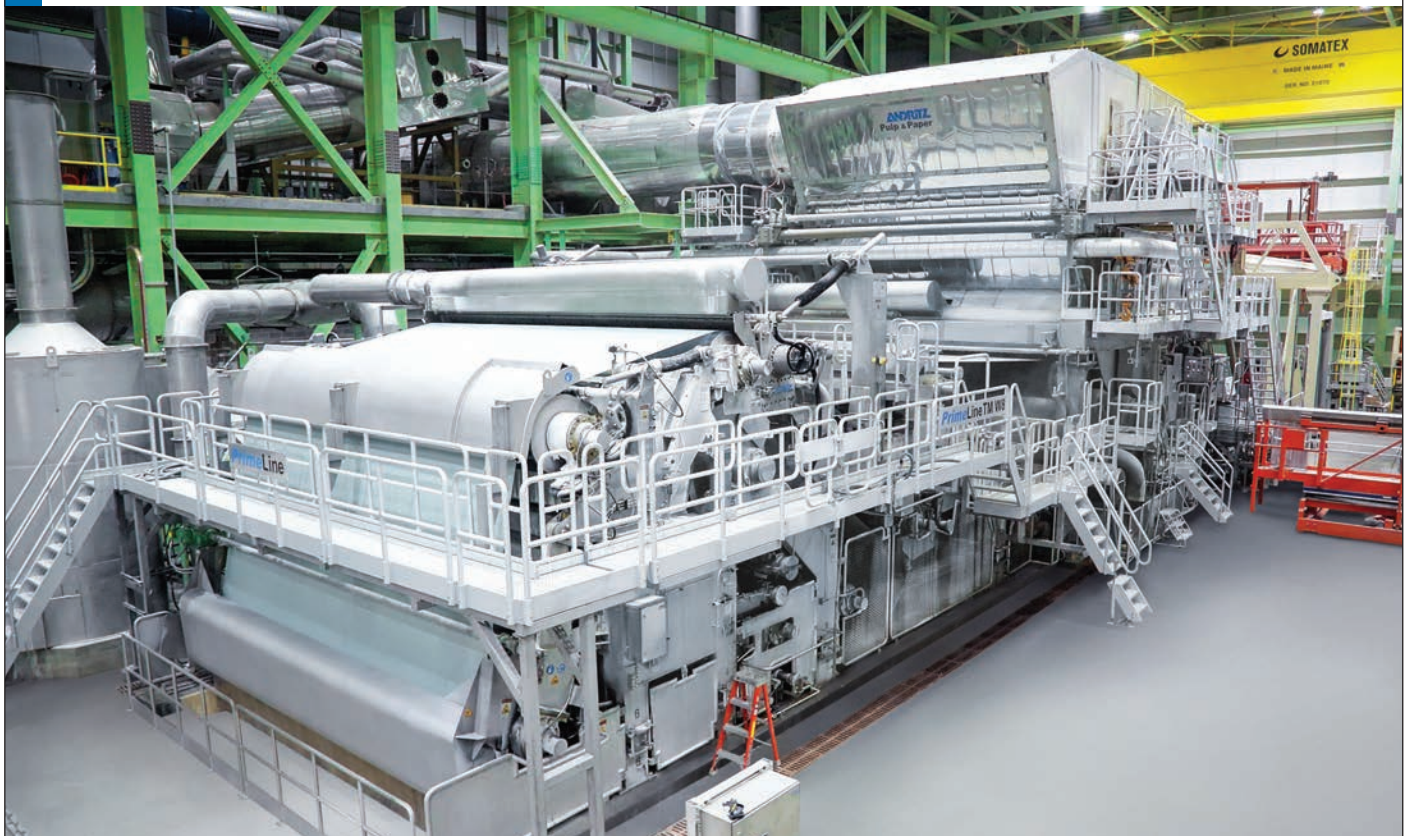


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PrimeLine™ tissue machine with key components that save resources



PrimeLine™ machines are widely embraced by the global tissue industry: not only due to proven performance, but also for innovations that are available now.

Based upon its extensive experience, ANDRITZ brings new energy-saving features and capabilities to

its CrescentFormer machines and components: they are equipped with the *PrimeDry* Steel Yankee, the *PrimePress* XT Evo shoe press, and the *PrimeDry* HeatRecovery ReEvaporation system which help achieve remarkable resource savings.



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Passion for tissue!

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ALGERIA

PMI to enter tissue business

International technology Group ANDRITZ has received an order from Paper Mill Investment (PMI) to supply a tissue machine with steel Yankee and shoe press to Algeria. The new plant will produce high-quality facial wipes as well as toilet and towel papers.

Start-up is scheduled for the first quarter of 2018.

The new ANDRITZ PrimeLineCOMPACT tissue machine has a design speed of 2,000 meters per minute and a paper width of 2.85 meters. The order includes a complete ANDRITZ stock preparation for virgin pulp with a capacity of 135 bdmt/day.

The tissue machine is equipped with the latest ANDRITZ shoe press technology (PrimePress XT Evo). Thanks to the energy-efficient design, improved dewatering, and reduced need for thermal drying, the shoe press minimizes energy consumption. The 16 ft. PrimeDry Yankee is made entirely of steel and enables a high drying capacity

PORTUGAL

Renova starts up first Valmet Advantage NTT machine in Europe

In late January 2017, Portuguese tissue manufacturer Renova produced its first jumbo roll on the first Valmet Advantage NTT tissue line in Europe. The Renova 2 mill, near Torres Novas, Portugal, will utilize the flexibility of the hybrid machine to produce both plain and textured tissue for their typical tissue products in bold colors.

"We are welcoming the production of a new generation of appealing paper at our new PM 7. Now we are eager to discover what we can achieve with the combination of Renova's proactive approach to innovation and Valmet's sustainable Advantage NTT technology. We believe its flexibility can provide us with endless possibilities to produce specially designed textured tissue products," says Mr. Paulo Pereira da Silva, Renova, CEO.

The PM7 has a design speed of 1,800 m/min in textured mode and 2,000 m/min in plain mode. The production line is optimized to save energy and fiber, as well as to add the possibility for product differentiation and increase the capacity for premium-quality products.

Paper Prime starts tissue production

Paper Prime, part of Trevipapel Group, and Toscotec announced the successful start-up of the new TM at the company's site in Vila Velha de Rodão.

"This start-up is a good example of what the two teams can achieve thanks to the efficient combination of Toscotec's latest technology and excellent team work. We finalized the installation and commissioning in time and only two weeks after start-up, the new Toscotec AHEAD-2.0S has achieved the operating speed of 2,000 mpm. It has been a pleasure to be a part of PaperPrime's project and we wish them good luck for their new business." says Marco Dalle Piagge, Sales Director of Toscotec S.p.A.

Located in Lousã, district of Coimbra, Portugal, Trevipapel S.A also has 2 converting plants with a converting capacity of 20,000 tpy. The Group's Joker brand is exported to Spain, central Europe, Africa and South America.

SPAIN

ICT Iberica boosts tissue capacity

Talmet will supply a complete tissue production line with an extensive automation package to ICT Iberica in Spain. The new Advantage DCT 200HS tissue line will be installed at the company's mill in Burgo.

The start-up is planned for the third quarter of 2018. The new investment will increase the current global production capacity of 540,000 tons per annum to 610,000 tons.

Valmet has previously delivered four tissue lines to ICT companies in Italy, France and Poland. The latest started up at the Kostrzyn mill in Poland in December 2015.

The new line will add 70,000 tons a year of high-quality toilet, towel, facial, and napkin grades for the European market. The raw material for the new line will be virgin fiber.

ICT Group, has been in the tissue business since 1978. ICT Group operates ten paper machines in four European countries: five in Italy, three in Poland, one in France and one in Spain. The ICT Group, has a revenue approximatively EUR 700 million.

Sofidel invests in an Advantage NTT machine

Valmet will supply a complete tissue production line to Sofidel's Ibertissue mill in Buñuel, Navarra, in Spain. The delivery includes an Advantage NTT 200 tissue production line, stock preparation equipment and automation system. Start-up of the new line is scheduled for third quarter 2018. The up-coming new line in Spain will be Sofidel's fourth Valmet Advantage NTT tissue line in Sofidel's machine fleet. Previously the company has bought one NTT machine to their Delitissue mill in Poland and two NTT machines to their new site, Circleville in Ohio, USA. All in all, this is the 15th tissue machine supplied by Valmet to Sofidel.

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

Established in 1966, the Sofidel Group has subsidiaries in 13 countries - Italy, Spain, the UK, France, Belgium, Germany, Sweden, Poland, Hungary, Greece, Romania, Turkey and the USA - with more than 5,500 employees, a consolidated turnover of 1,842 million Euros (2016) and a production capacity of over one million tonnes per year.

Successful start-up of Kemira's new strength resin plant



Kemira has successfully started up production in its new strength resin plant located in Estella, Spain. The high-efficiency and premium quality strength resins produced at the plant are used in tissue, laminate, specialty and packaging as well as food and liquid packaging boards.

Production of these tissue, paper and board grades

is growing in Western Europe, Eastern Europe and the Middle East region, and the new plant is well suited to serve Kemira's highly valued customers in these markets.

“Estella plant utilizes the most advanced production technologies, ensuring the highest purity and efficiency wet strength resins on the market”, says Eric Padovani, Senior Manager, Marketing, Pulp & Paper, EMEA. “This is vital for meeting the present and upcoming standards required by the tissue, paper and board industry in even the most stringent countries such as Germany.”

NETHERLANDS

WEPA takes over Van Houtum

WEPA Hygieneprodukte GmbH has concluded an agreement to purchase all the shares in the Van Houtum Group Holding B.V. from the Netherlands.

Van Houtum has 200 employees at its Swalmen site, focusing exclusively on the Away-From-Home (AFH) sector and generating a turnover of around EUR 60 million. The company's Satino Black brand has established a leading position on the market for sustainable solutions in the recovered substance cycle.

“We are looking forward to being able to develop Van Houtum, an AFH specialist steeped in tradition, and the Satino Brand further within WEPA. The values of these family companies are very similar and the product ranges complement each other excellently. WEPA intends to strengthen the Satino brand and enhance the private label range in particular from the specialised AFH sites in Müschede, Piechowice and Swalmen and to offer solutions from a single source”, Martin Kregel, WEPA Group Chairman.

The WEPA Group, headquartered in Arnsberg, Westphalia, is one of the three biggest providers on the European tissue market, with over 3,000 employees and a turnover of around 1 billion Euros. With the takeover, WEPA would also become a key player in the Away-From-Home (AFH) segment in Central Europe with a turnover of over 180 million Euros.

POLAND

WEPA starts up the new PM21

WEPA group announced the successful start-up of the new Toscotec's 32,000 tpy tissue line installed at Piechowic Mill, Poland.

The new AHEAD-2.0S machine has a width of 2.8 m and will run at a maximum speed of 2,000 m/min, producing, among other grades, super soft toilet paper from virgin pulp as well as recycled fibre as a raw material.

The new project will allow WEPA to optimize the existing logistics structures of all European sites, thus enhancing the competitiveness of the entire group.



PMP Appoints New President

PMP (Paper Machinery Producer) has appointed Miroslaw Pietraszek as President. Zbigniew Manugiewicz, PMP's co-founder and former President, will continue to serve as a member of PMP's supervisory board of directors.

Miroslaw Pietraszek has spent over 45 years in the Pulp & Paper industry. Miroslaw Pietraszek has been connected with the company for his entire business career and most recently held a position of Vice President Operations. Miroslaw has

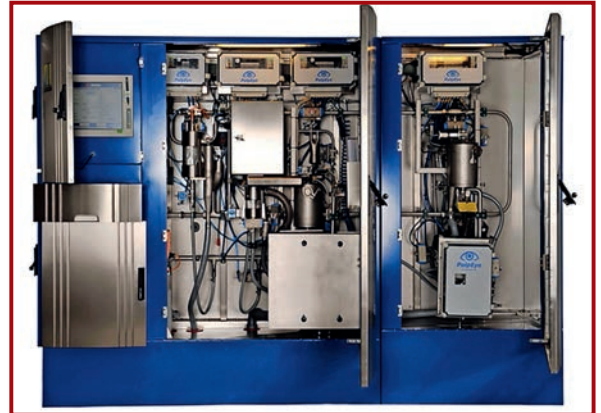


demonstrated his range of management, experience and dedication that will be essential to PMP's success in the years ahead.

Zbigniew Manugiewicz joined the company in 1979 and served as PMP's President for last 17 years. Under his leadership, PMP has become a recognized player in the Pulp & Paper industry worldwide.

AUSTRIA

ANDRITZ and PulpEye enter into cooperation agreement

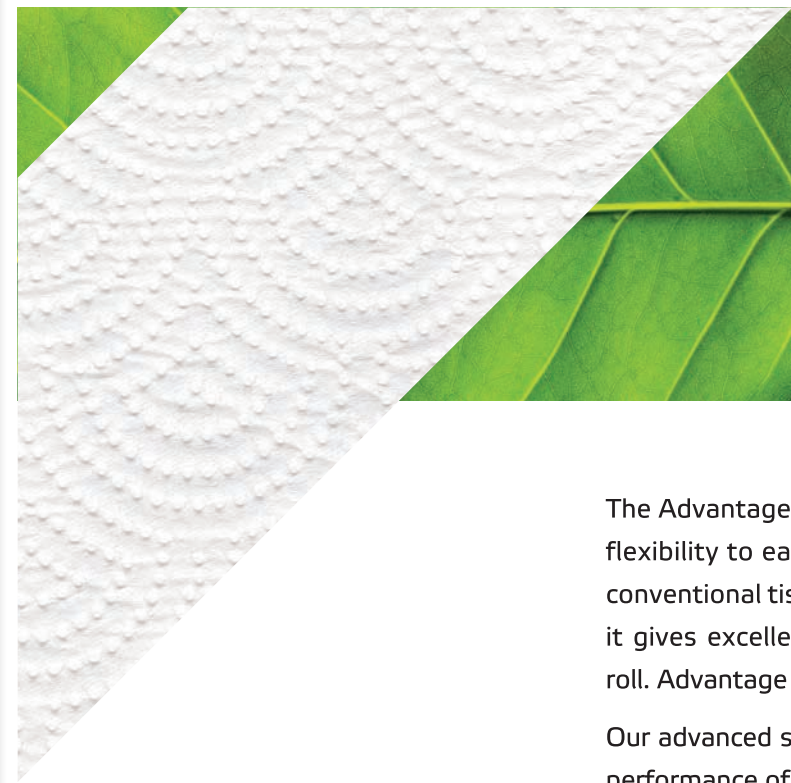


PulpEye sampling and analyzing cabinet. Photo: ANDRITZ

International technology Group ANDRITZ and PulpEye have entered into a cooperation agreement to promote, market, and sell PulpEye analyzer technology exclusively in ANDRITZ PULP & PAPER package offerings.

This ANDRITZ and PulpEye cooperation will enable customers to benefit from improved online chip and fiber datalytics to optimize the right process parameters in fiberlines and pulping processes, for instance by improving yield and optimizing chemical consumption. Furthermore, ANDRITZ and PulpEye can also provide customers with a remote online platform for operations support through IoT solutions. PulpEye is an innovative measurement technology company focusing globally on online pulp quality analysis applications for the pulp and paper industry. The PulpEye equipment is used to control the quality of any kind of pulp – sulfate and sulfite pulps, both short and long fiber, bleached and unbleached, TMP, CTMP and BCTMP as well as

Keep your tissue business moving forward



The Advantage NTT tissue machine gives you competitiveness and unique flexibility to easily swing from production of premium quality textured to conventional tissue in just a few hours. Compared to traditional technology it gives excellent softness and high bulk using less energy and fiber per roll. Advantage NTT – the new standard in premium quality tissue making.

Our advanced services and automation solutions improve the reliability and performance of your processes. Read more at valmet.com/NTT.



NSSC, OCC, and de-inked pulps. Recent product launches include modules measuring vessel cells and fiber wall thickness, as well as a fast consistency calibration module.

ITALY

Ariete chooses Toscotec for its new TM

Ariete S.r.l. – Futura Line S.p.a. Group – has ordered a new MODULO-PLUS machine from Toscotec for its paper mill in Cava dei Tirreni (Salerno), Italy.

The new tissue machine replaces the exiting one and startup is scheduled for July 2017.

All the dismantling and assembly operations will be performed and synchronized in order to minimize the mill's downtime. The scope of the supply includes a MODULO-PLUS in Crescent Former configuration with single-layer headbox.

Ariete S.r.l. has been working in the field of tissue paper since 1965. The paper mill, headquartered in Italy in Cava dei Tirreni (Salerno), spans along a property of 14,000 m² and has a production capacity of 22,000 tons/year.

OMET Tissue boosts production capability

OMET opened a new production site for the business unit dedicated to tissue converting machines manufacturing, which in the last year achieved a strong growth in sales. The new area, covering over 1000 m² including outdoor and indoor space, is situated in Valmadrera (LC) and integrates the historical headquarter in Via Caduti a Fossoli in Lecco. It serves as complementary production site where a dozen operators work at tissue converting machines assembling and testing.

“The new premises have been operative for a couple of months – as Marco Calcagni, OMET commercial director explained - and it represents the answer to the enormous increase in demand registered in the latest years in Italy and in many foreign markets”.

OMET Tissue product portfolio includes four main converting lines for the automatic production of disposable napkins, paper towels, non-woven products and placemats.

At the end of 2016, OMET started a new production site in Molteno (LC) dedicated to the printing machines business unit.

Futura announces new board and CEO

Futura enters its next stage of development with a new Board of Directors and the promotion of Piero Ceccon to Chief Executive Officer.

“Together with Faper Group President Fabio Boschi we have worked hard over the last few years to provide Futura with a strong and capable leadership, and we are now extremely happy to announce this important step in the company's growth”, said Fabio Perini, founder of Futura, who has taken the position of Honorary President, with Boschi Chairman.

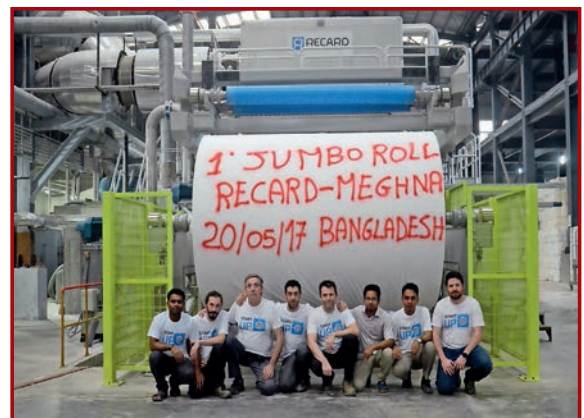
The Futura board is completed by two other key managers: Giovacchino Giurlani, who oversees innovation and product development, working closely with Mr. Perini and the rest of the team at FuturaLab; and Giulio Simonelli, who has been instrumental in implementing the highest operational standards at Futura over the years.

Ceccon joined Futura three years ago to head up the company's international operations, overseeing sales of technology and the ProCare service division. During this time the Lucca, Italy-based business has seen particularly strong growth worldwide, including numerous Andromeda line deliveries through which Futura has asserted its technical leadership in the field.

BANGLADESH

Meghna Group of Industries starts up Recard tissue machine

Recard's Easy Crescent plant for Meghna Group of Industries started up in Bangladesh on May 20th, 2017. The PM1 (width 2850 mm, production capacity 50 ton/day, speed 1200 m/min) produced its first reel of high quality



paper immediately upon startup, which took place smoothly and with no interruptions. Recard thus strengthens its presence in the country after the plant supplied to Bashundhara Paper Mills, which started up in 2010.

CHINA

Hengan Group starts up new ANDRITZ tissue machine

International technology Group ANDRITZ has successfully started up another tissue machine supplied to the Hengan Group, China.

The PrimeLine™ W8 tissue machine which started up at Hengan's Chongqing mill is the 13th ANDRITZ tissue machine supplied to the Hengan Group. It has a design speed of 2,000 m/min and a width of 5.6 m. The machine is equipped with an 18-foot steel Yankee for energy-efficient drying and safe operation. The scope of supply also included the complete stock preparation plant with ShortFlow concept, which minimizes both the investment costs and energy consumption as well as ensures high flexibility for grade changes. The entire automation system was also supplied by ANDRITZ.



High-quality tissue rolls produced on ANDRITZ tissue machines supplied to the Hengan Group. Photo: ANDRITZ

APP increases production capacity with eight machines

APP has invested in eight Toscotec tissue machines. Two of the Tissue Machines are scheduled to come on stream in Q4 2017 and

Q1 2018, respectively. The remaining six are planned for delivery between the Q3 2017 and the first half of 2018. Each tissue machine can produce, among other tissue grades, 300 tpd or about 100,000 tpa of high gsm tissue.

The scope of supply includes AHEAD-2.0L crescent former tissue machines, with a net trim width of 5.6m, 22 FT diameter Steel Yankee Dryer TT SYD-22FT and Steam Heated Yankee Hoods.

RUSSIA

Valmet receives its sixth tissue line order from Hayat Kimya

Valmet will supply an Advantage DCT machine including the flexible ViscoNip press and an extensive automation package to Turkish tissue producer Hayat Kimya. The company has decided to invest in a second machine at their mill in Yelabuga in Tartaristan, Russia, to meet the increasing demand for their high-quality tissue products. The new line will add 70,000 tons of tissue to Hayat Kimya's current production of facial, toilet and towel tissue.

Previously Valmet has delivered five Advantage DCT 200TS tissue production lines to Hayat, which have started up at Hayat's mills in Turkey 2010 and 2015, Iran 2013, Russia 2014 and Egypt 2016. Valmet also conducted an extensive rebuild of their TM1 machine in Turkey during 2015.

The Valmet Advantage DCT 200 TS new tissue machine TM7 will have a width of 5.6 m and a design speed of 2,200 m/min.

The raw material to be used in the tissue production will be virgin fiber and the new production line is optimized to save energy and to enhance the quality of the final product.

The order also includes upgrade of Hayat Kimya's Advantage ViscoNip presses, to next generation, for TM1, 5 and 6.

CANADA

Irving Consumer Products new TAD tissue line

Valmet will supply a new Advantage ThruAir (TAD) machine for Irving Consumer Products. The new machine increases Irving's capacity for premium household paper products. The machine will be delivered in 2018, and will support Irving's ambition to provide premium products to the North American market.

Valmet has previously delivered ThruAir machines to Irving in Fort Edward, New York, and Toronto, Ontario, as well as major rebuilds of TM1 and TM2 tissue machines in Saint John, New Brunswick.

Irving Consumer Product companies include Irving Tissue and Irving Personal Care. Irving Personal Care is the only manufacturer of baby diapers and training pants in Canada.

USA

SCA to close tissue production plant

SCA has decided to close the tissue production plant in Flagstaff, Arizona, in the US.

The closure of the Flagstaff tissue production plant is part of SCA's Tissue Roadmap and is aligned with the company's strategy to optimize the geographic production footprint to drive cost and capital efficiency and further increase value creation in the Professional Hygiene business area.

The Flagstaff tissue production plant has an annual capacity of 55,000 tons for the Professional Hygiene business. Production will be discontinued in June 2017. The restructuring costs for the closure are expected to amount to approximately SEK 250m and will be recognized as an item affecting comparability, mainly taken in the second quarter of 2017. Approximately SEK 40m of these costs are expected to impact cash flow.

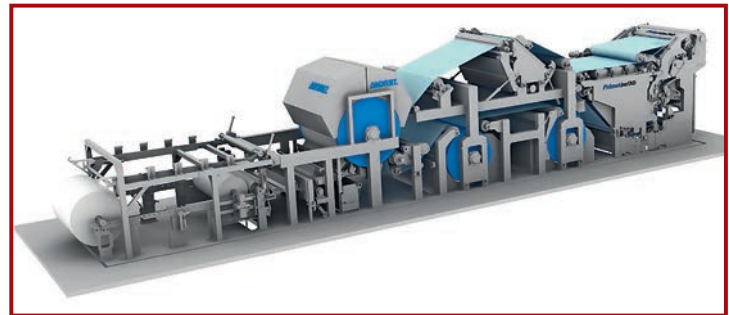
SCA, with the leading global brand Tork, is the second largest player in the US professional hygiene market. The US is the Group's largest market, based on net sales in 2016, and is highly prioritized by SCA.

ANDRITZ to supply TAD tissue machine to First Quality Tissue

International technology Group ANDRITZ has received an order from First Quality Tissue to supply a PrimeLineTAD tissue machine with complete stock preparation for its mill in Lock Haven, USA. Start-up is scheduled for 2019.

The TAD (Through-Air-Drying) tissue machine has a capacity of approximately 70,000 tons per year. The improved softness, absorbency, and bulk generated by the TAD technology give these products superiority over products made using conventional processes. ANDRITZ has supplied two TAD machines previously to First Quality Tissue's Lock Haven mill.

First Quality Tissue, which markets its products under the brand name "Plenty™", is one of the leading private label producers worldwide of TAD premium quality tissue and towel products. It currently operates five tissue machines in the USA (two at Lock Haven, Pennsylvania and three at Anderson, South Carolina).



3D sketch of an ANDRITZ PrimeLineTAD tissue machine. Photo: Andritz

ANDRITZ to acquire Paperchine

International technology Group ANDRITZ has signed a contract for acquisition of Paperchine, Inc., owned by AstenJohnson Holdings Ltd., headquartered in Charleston, SC. Paperchine and its subsidiaries have approximately 180 employees in total and manufacturing facilities in the USA (Rockton, IL, Springfield, MA, and Tucker, GA), Canada (Vancouver), Thailand (Bangkok), and Germany (Maintal). The purchase is expected to be closed by the end of June 2017.

Paperchine is a global supplier of highly engineered equipment and services to the paper industry's

leading manufacturers. For ANDRITZ, the acquisition of Paperchine strengthens its presence in North America and adds new products, such as the horizontal GapFormer, SigmaPro headbox, dewatering elements (former Johnson Foils), moisturizer (former VIB), and related service to its offerings for international clients. “We are very excited about this complementary acquisition that extends the ANDRITZ product range for paper and board machines,” says Michael Pichler, SVP ANDRITZ Global Pulp Drying and Paper Division Manager.

AstenJohnson CEO, Kevin Frank, comments: “The sale of Paperchine fits with our strategy to focus on growth in technical textiles, including paper machine clothing, advanced fabric, and nonwovens. Our friends and associates at Paperchine have successfully positioned the company as a leading global brand. They will have the opportunity to continue to grow with the support of ANDRITZ, while building on the strong foundation they have established as a part of the AstenJohnson family.”

Palatka mill selected For \$400 Million Investment

Georgia-Pacific’s Palatka mill in Florida has been selected as the location for the company’s previously announced investment of more than \$400 million in its GP Consumer (retail) tissue and towel business. The investment supports continued growth for key customers’ premium private label towel products. Investments to the Palatka mill include building a new paper machine using through-air-dried (TAD) technology, as well as adding associated converting equipment and infrastructure. Engineering and related work is beginning immediately, and startup of the upgraded operation is scheduled for 2019. In the last 10 years, capital investment and acquisitions in the Palatka mill have totaled \$306 million and statewide investments have totaled \$1.5 billion. The Palatka mill currently operates two kraft paper machines, three paper machines manufacturing paper for bath tissue and paper towels, and a number of converting operations producing finished paper products. The improvements will allow Georgia-Pacific’s current and potential customers to grow their

premium private label towel brands, as well as expand the company’s Brawny® premium paper towel brand. In Florida, Georgia-Pacific operates three facilities and employs nearly 1,600 people with total annual compensation and benefits of more than \$143 million.

Mogul Nonwovens Celebrates US Expansion

On March 23rd 2017, nonwovens manufacturer Mogul Nonwovens celebrated the Grand Opening of its newest growth venture, Mogul South Carolina Nonwovens. The new site, operating a 3.2 meter high-speed parallel laid spunlace line with 15,000 metric ton of annual capacity, is dedicated to serving the demand for Mogul’s industry leading nonwoven technologies in wipes, hygiene, filtration, and automotive markets. The state-of-the-art line has the latest carding technology for superior web formation, an outstanding ability to create custom patterns with hydro embossing, and the latest advancements for water and energy conservation.

Located on 20 acres and over 90,000 square feet of manufacturing in Gray Court, South Carolina, Mogul South Carolina Nonwovens Corporation is a wholly-owned subsidiary of Mogul Nonwovens. By expanding into the US market, Mogul is positioning itself to better serve existing customers and capitalize on the growing need of high quality nonwovens solutions in North and South America and Asia Pacific.

The Gray Court facility will bring over 70 jobs to the US, adding to the 500 employees part of the Mogul Nonwovens group.

With production sites on 3 continents, Mogul is one of the fastest growing nonwovens companies in the world. In 2016, Mogul became the first two-time winner of the IDEA “Entrepreneurship Award”.



Valmet received a repeat order for a new tissue line from First Quality Tissue

Valmet will supply a complete Advantage ThruAir tissue line to First Quality Tissue (FQT) in USA. The new production line is planned to be started-up in the second quarter of 2018 and it will add 70,000 tons of ultra-premium quality tissue to the company's annual production. Valmet has previously delivered three Advantage ThruAir lines to FQT's Anderson mill. They were started up in 2011, 2012 and 2016. "Once again we have been awarded with the opportunity to continue to support FQT on their expansion plans in the ultra-premium tissue category. The fact that this is the fourth machine shows that we can deliver according to very high expectations and we are excited to continue the very good partnership with FQT", says Jan Larsson, Director of Tissue Technology Sales, North America at Valmet.

MEXICO

Convertipap new tissue machine comes on stream

On June 2nd, 2017, Convertipap successfully started up its 90 ton/day tissue machine. The turnkey plant supplied by Recard's has a sheet width of 2850 mm and a speed of 1500 m/min. The machine began producing 24/7 immediately and after a week attained maximum guaranteed speed. Since 1992, Recard has installed four machines in Mexico and a total of eighteen throughout Latin America.



EL SALVADOR

Alas Dorada raises production capacity

Valmet has been trusted as supplier for the rebuild of Alas Dorada's PM4 in El Salvador. The main target for the rebuild is to raise production capacity by increasing press dryness, and enable improved paper quality as a second stage. This will be achieved by installation of an Advantage ViscoNip press combined with an Advantage ReDry web heater. The start-up of the rebuilt machine is scheduled for end of the year 2017. Alas Doradas is one of the three main manufacturers of tissue paper in Central America.

BRAZIL

Solenis opens new technology center

Solenis opened its new technology center in Paulínia, São Paulo, Brazil. Housed in approximately 1,000 square meters, the new research and development facility, known as the Paulínia Technology Center (PTC), will manage the region's customer applications needs and new product development.

The PTC is the company's seventh technology center worldwide. The other tech centers are located strategically in Wilmington, Delaware (USA), Krefeld (Germany), Barendrecht (the Netherlands), Shanghai (China), Drammen (Norway) and Terrassa (Spain).

The PTC joins Solenis' global technology network to provide exceptional customer service and expand the company's ability to build strategic partnerships serving the needs of the global process and water markets. "Dedicated to collaborating with our customers throughout Latin America, this state-of-the-art facility offers a wide range of laboratory services to support the region's growth," says Timothy Wood, Solenis senior vice president and chief technology officer.

"Brazil is already one of the world's largest pulp producers and it is a booming sector," explains José Armando Aguirre, Solenis vice president, Latin America. "Having this Technology Center and Global Center of Excellence ensures that Solenis is ready to provide continuous innovation and excellent service for a rapidly changing market."



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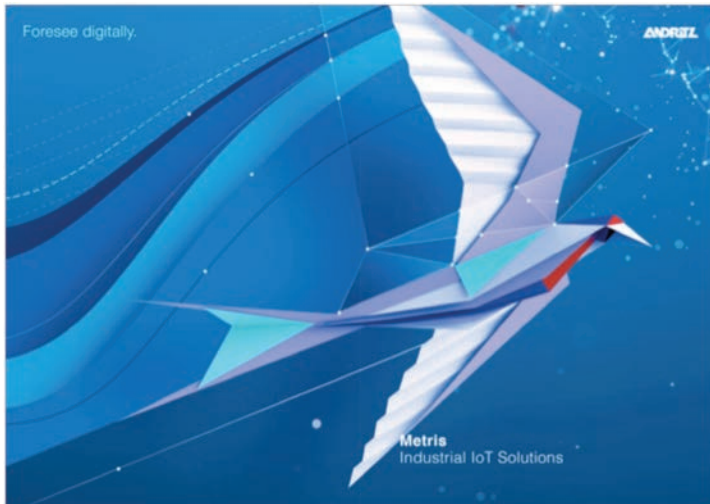
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ANDRITZ presents “Metris – Industrial IoT Solutions”



International technology Group ANDRITZ has combined its innovative IoT (Internet of Things) solutions, which are field-proven in many reference plants, with immediate effect under the technology brand “Metris – Industrial IoT Solutions”. Metris technologies are the very latest state-of-the-art in the IoT/Industry 4.0 sector and can be fully tailored to individual customer requirements.

SUBSTANTIAL CUSTOMER BENEFITS

Based on extensive and long-term experience as a supplier of technologies and systems for various industries, ANDRITZ offers a broad portfolio of intelligent, digital solutions that provide significant support to customers in achieving their production and corporate goals:

- Enhancing plant efficiency and profitability
- Optimizing the use of resources
- Constant and highest product quality
- Avoiding production downtime
- Maximum user-friendliness, for example easy control via smartphone or tablet PC

METRIS IS BASED ON THREE PILLARS OF TECHNOLOGY: SMART SENSORS, BIG DATA, AND AUGMENTED REALITY.

In addition to the use of conventional **Smart Sensor** technologies for analysis of measurements and signals, ANDRITZ offers micro and wireless sensors as well. This can be used to optimize operation of the plants or systems by analyzing specific parameters that are freely selected by the customer.

In the **Big Data** sector, Metris products calculate any deviations in production in advance by means of field-proven simulation processes and use them to derive the control actions required. In this way, for example, production downtime can be avoided or the use of consumables reduced.

With **Augmented Reality applications**, information is made visible where it is needed, which is on the spot at the plant itself. The technology focuses on showing the information in context so that the operating personnel gets the best possible support, particularly for complex control actions.

ANDRITZ OPP: SUCCESSFUL IOT SOLUTION ALREADY IN USE FOR MANY YEARS

Over ten years ago, ANDRITZ developed OPP (Optimization of Process Performance) – a system to optimize equipment and plants in the pulp and paper industry – for the PULP & PAPER business area and has continued to improve it further on the basis of customer experience. The OPP system detects any anomalies and deviations in pulp and paper production at an early stage by analyzing production data. Sheet breaks or other adverse effects on production can thus be predicted at an early stage.

As a result, countermeasures can be implemented in good time, guaranteeing reliable production and also optimizing operations and the use of resources. ANDRITZ OPP systems are being used successfully all over the world. Large corporations like Metsä Fibre, Smurfit Kappa, or Fibria have relied on the success of the OPP system for many years.

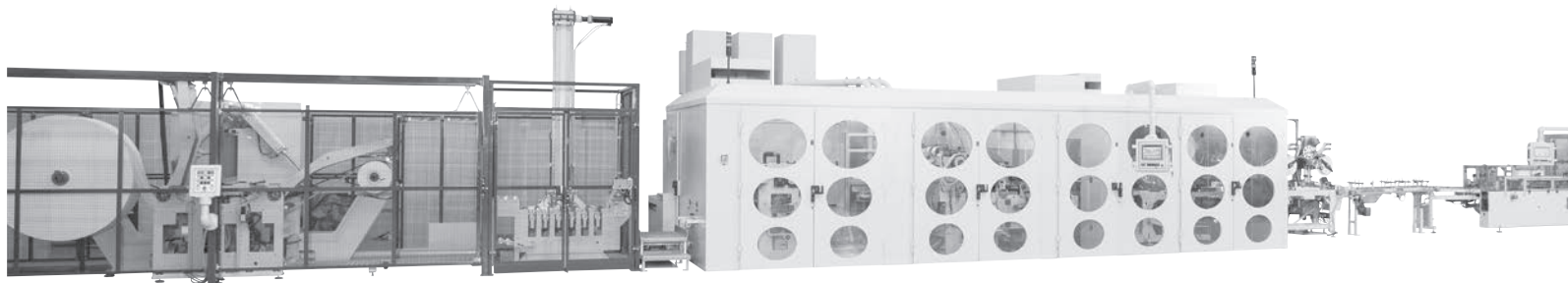
Now ANDRITZ has developed OPP further for use in other business areas and is offering solutions for different sectors. The technologies used are adapted to the requirements and needs of each individual customer.

Gerhard Schiefer, head of ANDRITZ AUTOMATION: “With Metris, we are combining all of the ANDRITZ GROUP’s IoT solutions under a single technology brand that stands for innovation and know-how. We offer scalable, multi-branch IoT solutions down to machine level that can be used for new and also existing machines and systems and support our customers substantially in achieving their goals in terms of productivity and efficiency in the best possible way.”

850!

We proudly present our new complete Handkerchief Line from a single source, Made in Germany by SENNING!

- The Production Machine S.PM 820 + Bundling Machine 660 TG provides handkerchiefs at a high performance level and with the highest flexibility: The S.PM 820 can handle tissue of 2 to 4 plies and produces single packs with 5 to 15 tissues per pack – standard and compact – and bundles starting from 2 single packs up to 144 single packs. With maximum speed, the line can produce 8.000 tissues, 850 single packs and 100 bundles per minute. With this new Handkerchief Line, SENNING is setting a further state-of-the-art standard.
- Handkerchief Lines
 - S.PM 820 + 660 TG with max. speed of 850 single ppm
 - S.PM 805 + 662 TG with max. speed of 450 single ppm
- Wrapping Machines for facials, napkins, hand towels and non-wovens
 - SE 660 with max. speed of 100 ppm
 - SE 662 with max. speed of 60 ppm
- SENNING supplies machinery – Made in Germany since 1949 - for wrapping facials, napkins, hand towels and non-wovens, for single and multiple stacks.
- SENNING is able to design its machines individually according to your needs and requirements and to find customer-specific solutions.
- SENNING is the company to contact whenever you are looking for a reliable partner in connection with the production of handkerchiefs, facials tissues, napkins, hand towels and non-wovens.



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Digital Tissue™: Fabio Perini's Value Proposition for Industry 4.0

In the era of Industry 4.0, managing the entire production process becomes the true added value for the tissue industry as a whole. Being able to define and map out a complete line to manufacture the finished product means fully understanding customers' production needs.

Fabio Perini is the only company in the world capable of producing complete lines integrating converting and packaging, hence creating the product and the process together with the customer in order to optimize efficiency, reduce costs and maximize the quality of the finished product. An extraordinary value for customers, who find in Fabio Perini their one-stop interlocutor and all-in-one provider of production solutions for their business.

"A holistic vision of the business is what the market demands", comments Stefano Di Santo, CEO at Fabio Perini, "and it is in this direction that the technological and service development is projected at our company. We have used a very specific term to call this new way of considering our customers' 4.0 facility by speaking of Digital Tissue™. It is not just a question of adding sensors to our technology or into the solutions we propose, but rather to create predictive and self-learning systems that allow maximizing the production efficiency of the individual machines and even more, the efficiency of the complete line."

The concept of Digital Tissue™ has been Fabio Perini guiding light also in the recent innovations that Fabio Perini S.p.A. has brought about, such as All-In-One and Weareable: products that are already available as concrete answers to converting, packaging and service demands.

WEAREABLE: COMPREHENSIVE REMOTE SUPPORT

Fabio Perini concretely interprets the extraordinary challenge proposed by the Industry 4.0 macro trend by presenting the device that bridges distances: Weareable.

"We followed our vision: the customer at the center. We were looking for a solution that would allow us to be in immediate contact with our customers' needs", explains Francesco Maltagliati, Chief

Customer Service Officer at Fabio Perini. "With Weareable, we acquire the ability to see, listen and react in a few minutes around the world, using our experience transversally, on every type of request, whether electronic or mechanical, and across our product range, limiting the presence of our hyper-specialized technicians to where and when the customer unquestionably needs them, yielding speed and efficiency. A wearable technology to share in real time videos, audio, diagrams and precise graphic indications between the operator on-board the machine and the pool of online Fabio Perini experts at our operational centers disseminated in the four continents where we are present with production sites. The device is comprised of bi-directional audio-video instrumentation. Thanks to the incorporated visor, the two Full HD support video cameras – one located directly on the helmet and one pivoting – to the integrated audio system and to the data connection, the technician at the operational center can precisely understand what the operator with the Weareable helmet on is showing simply by directly facing the "problem". And all this allows the technician to provide indications on how to proceed to promptly solve the issue".

Activating the Fabio Perini technicians and receiving 50 years of experience and knowledge at one's facilities is simply a matter of connecting to the Internet. Just a simple click of a button away!

A few minutes, and Weareable - whether in New Caledonia or in Canada, passing through Nigeria or the Virgin Islands - becomes operational.

The final experimentation phase on the field began in November 2016: Weareable was successfully used by Fabio Perini's customers in the Middle East and then in Europe and the United States. "We are answering the concrete needs of our market", continues Francesco Maltagliati, "through our propensity - consolidated in the course of the years - for technological innovation at the service of the true needs of all our customers". And Weareable is not the only innovation that Fabio Perini S.p.A. is proud of: Web applications, upgrade programs, high quality original spare parts are its spearheads.



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How could **Zero** be an **Option** for you?

Option Zero is a GDM program, launched in 2015, designed to maximize raw materials savings and minimize time for size changes while making production more effective through innovative and advanced technological applications.

GDM collects its customers' experiences and targets the evolving manufacturing needs for efficiency, quality and time & cost control, thus, GDM's Zero Time, Zero Waste, Zero Defects and Zero Glue solutions are continuously upgraded, allowing to meet current and future hygiene disposable market demands.



Up to 100% Time saving

In the Baby diapers market the need for high quality products, coupled with the necessity of keeping costs down, is driven by the positive global growth rate and Private Label increasing importance. New GDM Zero Time solutions with E-Cam technology for Front Wings, Core Cutter and Acquisition Layer applications are designed to minimize size changeover time ensuring production continuity.



Up to 20% Waste saving

Considering the global Adult incontinence segment expansion trend (+5% CAGR 14-16), product cost reduction is key: with GDM's Zero Waste kit for asymmetric panels it is possible to turn trims down to zero, cutting operative costs without compromising on quality and product feature requirements.



Up to 5% Glue saving

Leakage prevention, softness and comfort are the main drivers for consumers' satisfaction within the hygiene disposable market*. Eliminating glue consumption from specific processes allows to lower the risk of contamination, improving product quality overall while reducing unitary cost: discover our Zero Glue solution for Cuff Elastic Entrapment and benefits coming from ultrasonic welding.



Up to 33% less Defects

GDM's Zero Defects upgrade kits High Speed Unwinder and Single Culling System, are designed to increase your profits enhancing market satisfaction, through overall product quality improvement and claims reduction.

GDM's Option Zero kits are all available in both its machine portfolio and as standalone kits.

*Data source: Exxon-Mobil Presentation Outlook Asia '16; Consumer survey conducted by third party consultant



Established in 1996, Crown Paper Mills LLC (CPM) is a producer of Jumbo Tissue Paper rolls. The mill covers a total area of 50,000sqm, with an annual production capacity of 35,000 metric tones having machine deckle size of 1860mm for PM1 & 2700mm for PM2.

Headquartered, in the Industrial city of Abu Dhabi (ICAD) – U.A.E, the mill's "Prime Quality" Jumbo Rolls come in various grades such as Facial, Toilet, Kitchen Towel, Napkin, C-Fold and Carrier Tissue ranging from 13.5gsm – 45gsm.

Our mission is to serve our partners by providing best quality of tissue in the region and to fulfill the demands we also have expansion plans by year 2018 with new machine having annual capacity of 65,000 MT with deckle size of 5,650mm.



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On and around tissue

During TW Brazil (May 31 - June 2, 2017), METissue correspondent in Brazil, Priscilla Freire, had a chat with some key players on and around the tissue industry.

ANDRITZ

Thomas Scherb

Tissue and PB machines Director, Latin America

HERGEN

Rui Stefanini Junior

Application Engineering and Sales

OMET

Alberto Redaelli

International Sales Manager

STAX

Stevan Kalos

Sales Director

BTG

Carlos Hernan Llanos Acosta,

Tissue Applications Manager, South America

BUCKMAN LABORATORIOS

Fabricio Cristofino

Division Manager, Paper Technologies

KEMIRA

Felipe Higa

Sales Manager

KADANT

Carlos Garofolo

Technical & Commercial Director,
South America

SOLENIS

Noemy Aintablian Svitras,

Tissue Marketing and Applications
Manager, Latin America

MET: *What have been your company's most important technical developments in the last 5 years?*

Thomas S., Andritz: Steel Yankees (more than sixty were already sold).

Rui S. Jr., Hergen: Steel Yankees and dryers with local manufacturing, steam and condensate skids for fast installation.

Alberto R., Omet: We had several achievements: we worked on the design of our machines to implement efficiency and ergonomics reducing the need of highly skilled operational personal and reducing the maintenance. Our range of products has been implemented with several specific applications to improve the added value of the finished product and to offer the flexibility to be perfectly adapted to any specific need. But what I consider to be the greatest

innovation is the introduction of digital printing on napkins in our converting machines.

Steven K., Stax: Providing engineering layout proposals with complete equipment from STAX group and TCS tissue conveying system. Accessories for the tissue industry.

Carlos A., BTG: Vigilance, a system of measurement and vibration control.

Fabricio C., Buckman Laboratorios: Enzymatic technology, drainage polymer and coating for tissue.

Felipe H., Kemira: Development of sustainable microbiological control with harmless compound emissions.

Carlos G., Kadant: The introduction of the high-efficiency thermocompressors.

Noemy S., Solenis: Wet strength, dry strength, and coating products.

MET: *What areas are you currently focusing on in research and developments?*

Thomas S., Andritz: We are focusing on resource savings and quality improvements of the end product.

Rui S. Jr., Hergen: Metal coating for yankee dryer, refinery tanks for different fiber furnishes.

Alberto R., Omet: Converting machines and printing on tissue.

Steven K., Stax: A new model which has a new approach of transporting the rolls.

Carlos A., BTG: Tissue machine services.

Fabricio C., Buckman Laboratorios: For the cellulose market, we are focusing on enzymes to whiten and help cooking. Packaging market: enzymes to refine, products to have a higher development and drainage. And finally for the tissue market, our focus is on coating products.

Felipe H., Kemira: Yankee coating and resistance agents.

Carlos G., Kadant: Energy efficiency and machinery improvement.

Noemy S., Solenis: We focus on developing process system control. We aim at final product quality and safety, always considering the environment.

MET: *What are the current industry trends?*

Thomas S., Andritz: Industry digitalization and automation, there's a need for a software that can connect them, to optimize process performance.

Rui S. Jr., Hergen: Replacing old cast iron Yankees, new steel blades and savings for the production.

Alberto R., Omet: Trends depend on the market: some converters insist on efficiency, others put equal importance on easy maintenance. Our goal is to answer the specific needs, investing in both directions.

Carlos A., BTG: The search for low cost and high quality tissue.

Fabricio C., Buckman Laboratorios: Investing in new technologies, automation and sustainability for a better process control.

Felipe H., Kemira: The enhancement of tissue quality.

Carlos G., Kadant: Developments for the tissue industry and brown paper packaging.

Noemy S., Solenis: Quality, softness, more resistant tissue, productivity and environmental safety.

MET: *Which products are more likely to be innovative?*

Thomas S., Andritz: More intelligent equipment with higher production per year, also, at a lower cost. So the client would be able to monitor all equipment and their maintenance.

Rui S. Jr., Hergen: In the Brazilian market, the best innovation involves the dry capacity where the steel Yankee is still an innovative product.

Alberto R., Omet: In the past years, we have seen innovation in the tech industry. In this respect, digital printing will play a big role in the future.

Steven K., Stax: Finding unconventional methods of transforming tissue paper into rolls.

Carlos A., BTG: Consumables (creping blades, for example).

Fabricio C., Buckman Laboratorios: Enzymatic technology can always be innovated. Another potential is increasing the tissue resistance.

Felipe H., Kemira: Coating controls, resistance agents and microbiological control (environmentally friendly).

Carlos G., Kadant: ThermoMax Steam System is our innovation.

Noemy S., Solenis: There is always potential for innovation. We have a goal to launch 5 new products per year.

MET: What are the market challenges and opportunities?

Thomas S., Andritz: The tissue market grows at 4% a year. The client needs to have a technology that reduces his cost, to save energy and to consume as little water as possible.

Rui S. Jr., Hergen: The South American market is still growing with some opportunities in Peru

and Colombia. Hergen is also active in the United States and Europe, in the food industry, where steel dryers are necessary for high temperature and high pressure.

Alberto R., Omet: Challenges reside in the fact that the economy is global now. Sometimes it has an impact in the tissue business. Opportunities are present in growing markets such as Africa and South America, as a result of the increase in demand for tissue paper products.

Steven K., Stax: Any kind of risk on safety and security is a challenge as it can disturb the sales process. Opportunities are present in the countries where consumptions are low.

Carlos A., BTG: A supplier's challenge and opportunity is to be part of big global tissue producers' groups.

Fabricio C., Buckman Laboratorios: To keep searching for low cost. Increase of high performance. Sustainability (water use and reuse, circuit closing).

Felipe H., Kemira: Keeping up with the environmental regulations around the world.

Carlos G., Kadant: The challenges for the Brazilian market are the regulations and currency fluctuations. Opportunities are in the cellulose, tissue and packaging areas. Recyclable products as well.

Noemy S., Solenis: The geography will be a determiner for the tissue choice. The opportunities will always exist once the tissue is a necessary product. ■



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St. Croix Tissue

The strong newcomer in US tissue business



The ANDRITZ tissue machines at St. Croix

Two decades ago, the Woodland mill in Maine was a vibrant pulp and paper complex. Suffering the fate of many commodity pulp and fine paper mills, Woodland was near extinction in 2010 when a company with a vision bought the assets, injected USD 200 million (EUR 170 million), and changed the course to value-added tissue production.

St. Croix Tissue is among the newest producers of premium tissue parent rolls in North America. The machine hall is built next to the existing hardwood pulp mill Woodland Pulp. Mirror-image ANDRITZ PrimeLine tissue machines, which started up in 2016, are quickly ramping up to a combined design production of 126,000 t/a.

“Without question, the addition of tissue making capabilities saved this pulp mill,” says Arvind K. Agarwal, CEO of International Grand Investment Corp. (IGIC), the parent company of Woodland Pulp, St. Croix Tissue, and Cascade Pacific Pulp mill in Halsey, Oregon. “Just prior to our buying of Woodland in 2010, the owner (Domtar) put the mill into indefinite shutdown.”

REBIRTH

The rebirth of the mill has special meaning to Marty Richard, Tissue Manager. Richard was raised in the local community and worked at the mill for 16 years. “We saw some tough times and it looked like the end was near,” Richard says. “In the late 1980s, there were 1,200 people working in the pulp, paper, and OSB (Oriented Strand Board) plants around here. Before IGIC came in there were about 320 people in the pulp mill left. To come full circle where we are investing and hiring – for a mill that has a bright future – is really rewarding to be part of.”

SETTING THE STAGE

“When we acquired Woodland in 2010, we already had the idea to maximize our return by adding tissue making capacity,” says Agarwal. “My job was to turn this facility around by converting it from a commodity producer to a value-added facility.” Agarwal and his team went to work immediately. “First thing,” Agarwal says, “was to reduce our dependence on oil by bringing natural gas to the mill. Local distribution companies said it would take several years to permit and build a pipeline. We did it in 10 months with an investment of USD 17 million. That was a positive indicator to the employees and community that we meant business.” “There were also investments to improve the reliability and throughput of the kraft mill,” says Marco L’Italien, Vice President. These investments set the stage for the announcement in 2013 that a new tissue mill would be built.

PROVEN SUPPLIER

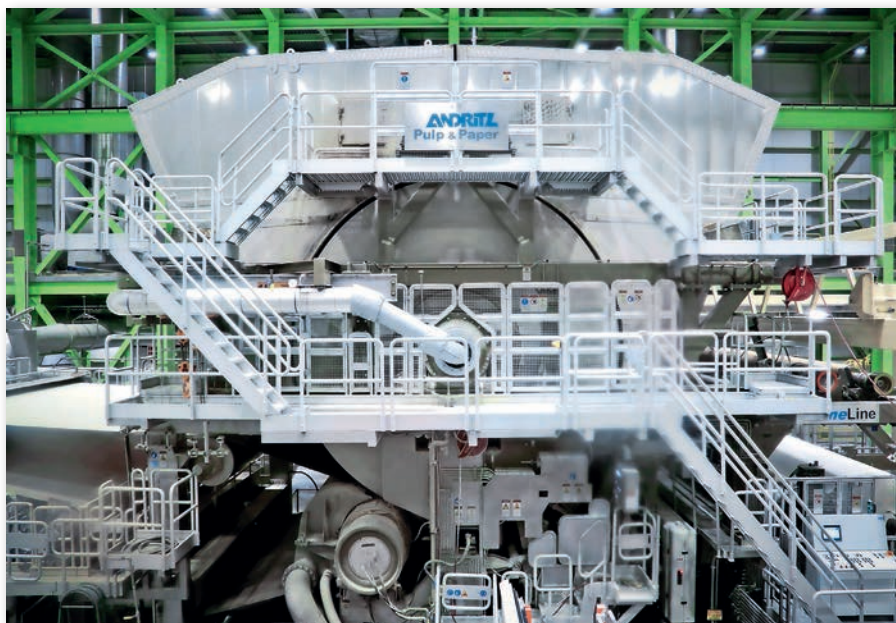
According to Tom Dorsch, Project Leader for St. Croix, “We went through a very detailed process to develop the specs for this mill, and ANDRITZ was able to fulfill all the requirements of our specs.” Of importance was a spec for a steel Yankee, instead of cast iron, because of the heat transfer advantages and safety factors. St. Croix specified 18-foot diameter Yankees instead of the standard 16-foot ones. “The larger Yankees were a good choice,” L’Italien says. “We don’t have nuisance breaks since we have eliminated the steambox and simplified the machine.”

Another consideration was machine width. “To meet the needs of one of our key customers,” Richard says, “we needed a machine that would give us roll widths from the standard 102 inches (2,591 mm) up to 112 inches (2,845 mm). Not too many tissue manufacturers have this capability on-machine.”

“We have come to appreciate ANDRITZ’s contribution not only for their up-front engineering, but also for their understanding of the entire process,” Agarwal says. “They have been an excellent partner the entire time – from the initial design to optimization of the mill. They have also kept in the forefront of technology, ahead of their competitors.”

BUILDING THE VISION

The contract with ANDRITZ was signed in January 2014. Groundbreaking for the new mill occurred in October 2014. “We had one of Maine’s harshest winters,” Dorsch recalls. “This at the time we were doing the deep foundation work. There were challenges to be sure, but all of the suppliers, including ANDRITZ, stepped up to help us recover schedule.” For the Baileyville area this was a massive construction project. “Logistics was one of our biggest challenges given our remote location,” Dorsch says. “It is 35 miles to a deep water port, 90 miles to the closest airport, and highway access is by two-lane roads. We had over one million construction hours involving 525 people on-site at our peak in the middle of winter.”



St. Croix specified a large Steel Yankee (18-foot diameter) for both machines. TM1 started up in March and TM2 in July 2016.

SUCCESSFUL START-UPS

On the equipment side, ANDRITZ delivered the first machine in May and the second one in August 2015. “We began commissioning TM1 in January 2016,” says John Schamell, ANDRITZ’s North American Vice President for tissue and drying. “Even though construction was proceeding around us, we checked the machine out section by section. It was a little hectic and the operators were brand new. But, we got stuck on the wire in early March.” The second machine was commissioned and started up with a more traditional approach and pace. “It started up well,” says Schamell, “even though we had fewer resources since TM1 was in full operation by then, we had a good start-up in July 2016.”

“In our first full month of operation with both machines, we reached 70% of saleable design capacity for this mill,” Dorsch says. “I think that’s a pretty fast ramp-up.” When asked about the working relationship with ANDRITZ, Dorsch comments, “Whenever there were issues, ANDRITZ took ownership. Any problem got fixed and got fixed well. They were very open and transparent. They were always sensitive to timing, costs, and the impact on our operations. They are an excellent partner that way.”

MULTI-NATIONAL MACHINE

About 85% of the machine components were manufactured at ANDRITZ’s facility in Foshan, China. The Steel Yankees were fabricated in ANDRITZ’s state-of-the-art workshop in Hungary. Headbox, press rolls, and hydraulic systems came from Europe and the air systems came from Canada. “Like many North Americans, I wondered what the quality of the components manufactured in China would be,” Richard says. “I went to the ANDRITZ workshop in Foshan to inspect the first machine. It was clear that quality was the first thing on the minds of the people – we didn’t even have to ask the question before management was explaining their QA/QC processes. It was impressive. After delivery, we could see that the workmanship was really excellent.”



St. Croix Tissue produces 88-inch (2,235 mm) diameter rolls.

LOCAL TRAINING PARTNERSHIP

“ANDRITZ committed a very good team to this project, and they integrated well with our group,” Dorsch says. “This is the third machine-pair start-up I have worked on and I can say that this project had more vendor support than I have typically seen. But, it was essential here given that our workforce was green with very little tissue experience.” St. Croix partnered with the local community college to design a training program so potential job candidates could learn something about tissue making. Completing the program did not guarantee a job, only the opportunity for an interview. “Then in August 2015 we hired the initial team of 58 employees,” Richard says. “The

“The future of this facility as a commodity pulp mill was simply not sustainable.”



Arvind K. Agarwal
CEO, International Grand Investment Corp.

SUCCESS
STORY





St. Croix's Marco L'Italien, Vice President (left) with Marty Richard, Tissue Manager

community college again partnered with us for a fourmonth training program. Much of this training was conducted by suppliers, including ANDRITZ." Part of the funding for this project comes through a New Market tax credit program. A requirement for that credit is that St. Croix hire 60% of its new employees from a lowincome bracket and maintain that ratio for seven years. "This has a huge benefit for the community," L'Italien says.

EXCELLENT RUNABILITY AND SMOOTHNESS

"Every converter, who has run our tissue, likes it," L'Italien says. "One converter was able to raise speeds by 70% due to the runability of our product." St. Croix considered investing in structured tissue, but decided

to go with the CrescentFormer. "Even though our tissue is not structured, it is of very high quality," Richard says. "In some cases, it has allowed us to get a foot in the door in traditional structured markets. The formation on the CrescentFormer is just so good that we can compete well in the softness for the higher end bath tissues." "Before we started up, I was concerned

"Whenever there were issues, ANDRITZ took ownership. Any problem got fixed and got fixed well."

Dorsch

about physical quality of the reels, since we would be making 88-inch (2,235 mm) diameter rolls," L'Italien says. My concerns were unfounded. These machines make nice flat rolls with excellent profiles. Whatever ANDRITZ is doing with its reel building technology certainly is working." ■



Tom Dorsch, St. Croix Project Leader (left) with John Schamell, ANDRITZ's Vice President North America for tissue and drying, on TM2.

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SENNING Wrapping Machines: **MAKE THE DIFFERENCE**

SENNING is internationally known for folded paper and tissue products and ensures highest quality and innovation, reliability and service. Since almost 70 years, SENNING is one of the world market leaders in the field of wrapping machines.

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SENNING delivers wrapping machines for all demands: The Wrapping Machine SE 662 provides fully automatic, highly efficient wrapping of lunch, dinner and cocktail napkins, facial tissues, hand towels and non-woven products with up to 60 packs per minute in printed or unprinted film or paper.

For wrapping single and multiple stacks in printed or unprinted film or paper, SENNING offers the types SE 662 D or SE 660 D, depending on the required performance.

In case a higher performance is required, the Wrapping

Machine SE 660 is available, for extremely flexible, fully automatic, high performance wrapping of lunch, dinner and cocktail napkins, facial tissues, hand towels and non-woven products with up to 100 packs per minute in printed or unprinted film or paper. The high output of the machine can be reached by some special technical features, e.g. a trailing bottom folder where the folding process is carried out while the product is moved.

SE 660 UNIQUE DESIGN

The robust SE 660 with its stable machine frame is very low in vibrations, resulting in exact movements for

high production reliability and extraordinary durability of the machine. The clean design of the Wrapping Machine SE 660 in combination with the usage of servo-motors leads to a low number of movable components in the machine. This prevents damages to the machine as there are almost no shafts, gears or belts where the film can be retracted. Moreover, the machine provides a good accessibility due to sliding doors, a unique feature of the SE 660, which is highly appreciated by SENNING customers. The sliding doors (opening both machine sides completely) allow a free access to the machine and a better handling in case of a tight installation location, therefore, it can be cleaned easily.

For a gentle processing of the tissue products, SENNING uses high quality Teflon-coated surfaces for the components which are in contact with the tissue product so that the friction between components and tissue products is very low.

With the SE 660, packs within a very large format range can be produced, e.g. with a package height between 12 and 170 mm. The format changeover can be done very quickly and easily by using servo-drives. The adjustment is possible without any tools, just by quick-release levers.

For good energy efficiency, SENNING uses light and

stable movable components by FEM analysis (Finite Elements Method) which leads to a weight optimization of the movable components with an optimum power transmission. Moreover, movements improved by simulation, which leads to steadier and quicker movement processes, enhance the energy efficiency.

SENNING procures high quality components for the Wrapping Machine SE 660. All these items are globally available. An overload management is protecting the machine in case of a crash. The high precision promotes the durability and reliability of the machine SE 660. In addition, it reduces friction and abrasion of parts and products.

TAILOR-MADE TO SATISFY EACH CUSTOMER

For each wrapping machine, SENNING provides a wide range of options, such as labeller, thermo-transfer printer, cardboard feeding system, standardized and individual shapes of perforations, second film roll unwinding and automatic splicing for the film.

SENNING customers appreciate options especially designed to produce facial tissues, such as conveying tracks with the function of buffering and diverting, automatic inline take overs from upstream equipment with separation station and stack shape control. ■



Wrapping Machine SE 660



INNOVISION MACHINE

The more We innovate, the more You save

INNOVISION MACHINE™ is a Fameccanica diaper machine concept, with excellent performance levels and high quality products for end users.

THE "INNOVISION" PROJECT

Fameccanica Group is leader in the development of machinery for manufacturing hygiene products, delivering custom solutions and anticipating needs in respect of sustainable development. In 2009, the company started the "INNOVISION" project, an internal Fameccanica contest, part of its Innovation Management System, which motivates employees to generate innovative ideas in the field of technology and processes as well as the organization and systems; every year, the best ideas are awarded.

INNOVISION MACHINE™

The features of the INNOVISION MACHINE™ provide new solutions for raw materials and innovative combinations of ultrasonic and thermo-bonding technologies. Together they contribute to reducing the environmental impact and allow cost saving of 1.5 MM EURO per year, estimated for each Fameccanica machine FA-X P10 at 1000 ppm. These are seven distinctive features which we will detail in the following sections:

- **GLUELESS™ Cuffs**

The thermo-sealing cuff elastics application replaces the standard version with glue. This is a new process solution based on a thermo-mechanical bonding system to fix Cuff Elastics between two layers of nonwoven in intermittent mode.

In terms of tension-elongation, the Glueless™ solution offers the same results as standard application with glue.

- **Fameccanica Lamination System (FLS) with integrated tape**

The in-line application of tape between two FLS nonwoven layers, replaces the standard FLS version, achieving a stronger bonding of the tape inside the back ear.

The results are: raw material saving, more breathability, more resilience: the same elasticity performances for different cycles of use, no contamination with glue.

- GLUELESS™ frontal tape**
 The in-line creation of frontal tape on nonwoven backsheet with Ultrasonic bonding replaces the standard version with glue. Fameccanica Glueless™ frontal tape structure is the combination between the Nonwoven Backsheet and a Nonwoven acting as a Loop through Ultrasonic sealing. The results are: raw material saving, more softness, pattern customization, no contamination with glue.
- Intermittent SAP & X-THRUE™ Core Control System**
 The targeted SAP application on the Absorbent Core replaces the standard homogeneous distribution. The major amount of SAP is distributed in the central part of the core lowering the amount of SAP in the edges. The X-THRUE™ controls SAP presence and its position in the core. Main uses and advantages are: saving of SAP; on line monitoring of the pad quality; control of dosing accuracy; easy integration with standard industrial logic components.
- GLUELESS™ Leg Elastics and Narrow Poly**
 The Thermosealing System for the application of Leg Elastics replaces the standard process with

glue. Leg elastics are fixed between two layers of nonwoven in intermittent mode. This solution is combined with the reduction in the width of Poly Backsheet. In terms of tension-elongation, the Glueless™ solution offers the same results as standard application with glue.

- GLUELESS™ ADL**
 The Ultrasonic System for ADL Application replaces the standard process with glue. ADL lamination on topsheet with Ultrasonic sealing, gives a better appearance to the topsheet, which becomes softer and nicer. The new solution offers the same or even improved performances in terms of Acquisition Time and Wetback, if compared with the standard product version.
- Fluffless Core**
 The Innovative Thin Core replaces the standard SAP & Fluff Core. Fameccanica fluffless core solution is a version with SAP entrapped inside the ADL. The main outcomes: excellent results in terms of Acquisition Time; New SAP Immobilization; Breakthrough Integrity. ■

INNOVISION MACHINE was one of the attractions of Fameccanica booth at INDEX17.



Fameccanica's INNOVISION MACHINE at INDEX 17

PAPER-ME 2017 - TISSUE-ME 2017

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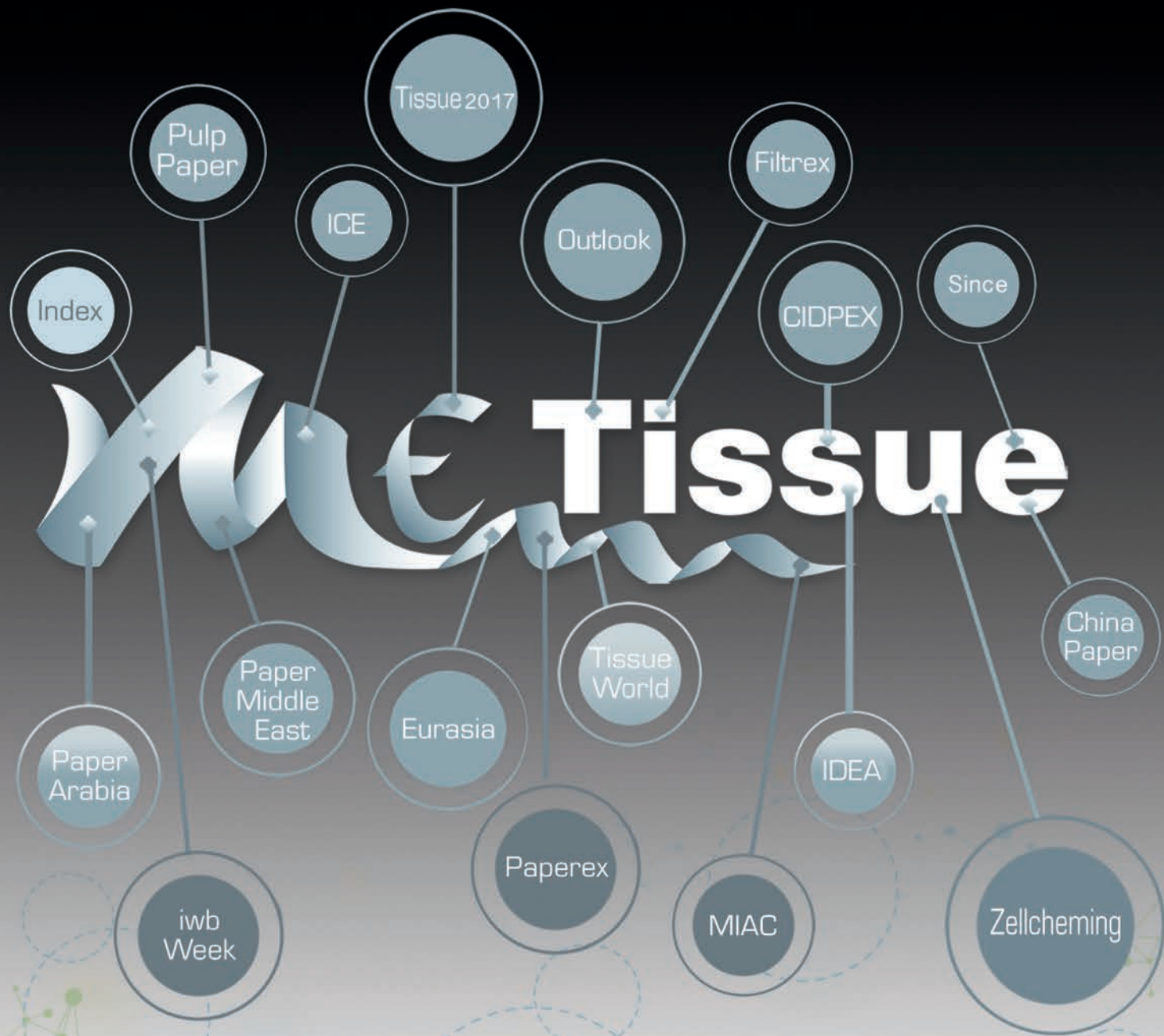
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