Tissue

Issue 34 • 2017

Africa
Emerging-market or driver for global growth?

ENKA HIJYEN
Turkey's new diaper producer

A look at the future of the tissue industry in the Middle East and North Africa

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Passion for tissue !

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UAE

Al Nakheel Paper Mill to start production in 2017

Fine Hygienic Holding new tissue mill, Al Nakheel, is planned to start production at the end of 2017. The new line, including Valmet's Advantage DCT 200TS tissue, Focus rewinder and the stock preparation equipment is being installed at FHH premises at Al Nakheel Mill in Abu Dhabi, UAE.

The new tissue machine will have a width of 5.6 meters and a design speed of 2,200 m/min. The new line will add 60,000 tons of high quality tissue per year to the company's current production of bath, facial, napkin and towel tissue for consumers in the Middle East.

Three Valmet tissue machines have already been installed at the FHH mills - Al Bardi Paper Mill and Al Sindian Paper Mill in Egypt and Al Snobar Paper Mill in Jordan.

Crown Paper Mill invests in a new tissue machine

A new tissue machine will be installed by Valmet at Crown Paper Mill in Abu Dhabi.

The deal which was finalized at the beginning of 2017 includes a complete scope for tissue machine with a width of 5.6m and capacity of 65,000 tpy.

Crown Paper Mill is a tissue paper manufacturing company located in Abu Dhabi, United Arab Emirates. The company was established in 1996 and was formerly owned by the Gulf Investment Corporation (GIC) before its acquisition by Ittihad Investment in 2015.

The company is currently operating two tissue machines with a combined capacity of 30,000 tpy.

Ittihad International Investment is also starting the construction of a 325,000 tpy uncoated woodfree paper mill at its Ittihad Paper Mill site in Abu Dhabi, UAE. The 7.5m wide machine, the first one of its kind in the region, will be installed during 2018.

Ittihad International Investment is a private holding, engaged in a wide spectrum of economic activities. Established in 2008, Ittihad group governs several companies in the Middle East and maintaining a focused approach towards greenfield projects.

Star Papermill: A new Tissue Mill in Abu Dhabi

A new comer in the tissue business in UAE, Star Paper Mill signed a contract with the Italian supplier, Recard, for the supply of a turnkey plant to produce high quality tissue paper in Abu Dhabi.

The new Crescent Former tissue machine will produce 38,000 tpy and will be equipped with the latest-generation of shoe press, NipcoFlex T shoe, as a result of a new collaboration between Recard and Voith.

The start-up of the mill is scheduled in the spring of 2018.

EGYPT

Handy - Alex Converta to install a new tissue machine

The new management of Handy is getting ready to install their new tissue machine at their mill located in Borg El Arab El Guedeeda in Egypt.

The new machine with 2850 mm sheet width is designed for a production capacity of 78 ton/day and will run at a maximum speed of 1500 m/min.

In addition to the machine and the stock preparation, the Italian supplier Recard equipped the plant with a 3 backstands double slitter-rewinder with variable crown calender.

Handy - Alex Converta started operating in 1978 as a tissue converting in Alexandria in the northern part of Egypt.

In 1989 the company established a tissue paper mill in Borg El Arab El Guedeeda city and transferred all its converting activities there. In 2015, the company stopped its production activities and was sold to the Habico company in Egypt.

Soon after the acquisition, Habibco Trade Company invested in the new tissue machine to improve the mill's production and output quality. Habibco is currently involved in the paper trading business and already has plans to Continue investing in new converting equipment for its integrated plant.

Hayat Kimya's started up a new tissue machine in Egypt

The Expansion plans of Hayat Kimya Group in the region are on track with the startup of their 70,000 tons per year Valmet tissue machine (TM6) at the group's new site in Ain Sokhna, Egypt in January 2017.
Valmet has previously installed five new machines to Turkey, Iran, Russia and provided an extensive rebuild of Hayat's TM1 in Izmit, in Turkey. The new line in Egyp with a width of 5.6 meters and a design speed of 2,200 m/min, will add 70.000 tons of high quality tissue to the company's current production of facial, toilet and towel tissue.
To enhance the production efficiency, the tissue machine is complemented with two Focus Rewinders with a width of 2,8 meter and 5,6 meter.
Hayat Kimya operates in Egypt since 2012, as Hayat Egypt Hygienic Products S.A.E producing baby diapers under the Moflix brand.

ETHIOPIA

Yekatit Pulp and Paper Factory and China CEC Corp. to construct the largest paper mill in Ethiopia

A contract has been signed between Yekatit Pulp and paper, a sister company of yekatit paper converting plc, and China CEC corporation to kick start the construction and installation of Yekatit pulp and paper factory. The Chinese company will be involved in the design, installation and commissioning of the pulp and paper factory located in Gelan subcity, Oromia region. Occupying 50,000 square kilometers of land and with a cost of over 1.9 Billion birr (over 80 million USD), this project will become the biggest pulp and paper mill in Ethiopia once completed. The pulp and Paper factory will produce (annually) 70,000 tons of paper for packaging purposes and 15,000 tons of tissue paper pulp for the production of toilet papers, table napkins and kitchen towels.
The current demand of Ethiopia for paper products will rise from the 200,000 tons per year to 400,000 tons per year within the next five years. To this end, the government of Ethiopia will pump an equivalent of 2.6 billion ETB or 130 million USD into this industry.
The turnkey project is divided into three phases, according to the project director Ato Yonas Alemu. The first phase sees the establishment of a paper facility with a capacity of producing 210 tons of rolled paper per day. In the second phase, a plant with a capacity of producing 45 tons of soft paper per day will be put into place. This will in turn aid to produce the annual demand of 12,000 tons of exercise books that are currently being imported to Ethiopia. The final stage of the project will establish a pulp production facility.
The future Yekatit Pulp and Paper factory will export paper items worth more than 10 million USD and in the process substitute for imported paper products which are worth more than 15 million USD. This will supplant 70% of imported paper products. 38% of the civil work of the plant has been completed and CEC china engineering corporation is expected to complete and hand over the project within 24 months after the date of the first down payment. The project is expected to start operation by mid-2019.

SOUTH AFRICA

Universal Paper Manufacturers successfully starts up TM5

On the 19th of February 2017, TM#5 successfully started-up at UPM's Ga-Rankuwa mill in South Africa. The supply contract was signed in December 2014 between PMP (Paper Machinery Producer) and Universal Paper Manufacturers (UPM), part of the Universal Paper group, for a turn-key green field tissue mill based on Intelli-Tissue® Advanced 1600 tissue making line.

UPM's TM5, Intelli-Tissue® Advanced 1600 has a total capacity of 28 000 tpa (operating speed 1600 m/min, reel trim 2670 mm), depending on the tissue grade (basis weight at reel from 13 to 40 gsm).

ITALY

FAMECCANICA and BICMA end a patent infringement dispute

Fameccanica.Data S.p.A. and BICMA Hygiene Technologie GmbH have reached a confidential settlement ending a patent infringement dispute relating to the FAMECCANICA patent EP1941853 concerning a method for producing sanitary articles with "zero-waste" side panels.
As part of the settlement, FAMECCANICA and BICMA have entered into a royalty-bearing license agreement to the PATENT so that BICMA may continue to manufacture the equipment as described in the PATENT claims, for sale to and use by BICMA's customers operating in such countries within the geographic European territory where counterparts of the PATENT are existing and in force. FAMECCANICA and BICMA agreed not to disclose the remaining terms of the settlement agreement and of the patent license agreement.

Toscotec to supply a new Tissue Machine to Eurovast's Cartiera Della Basilica

The Italian company EuroVast has chosen Toscotec again to expand the capacity of its Cartiera della Basilica at Botticino's plant.
The new tissue machine, a MODULO-PLUS crescent former with single press configuration, with a maximum production capacity up to 30,000 tonnes/year and a paper trim width of 2740 mm will replace the existing suction breast roll machine and will be started up in the last quarter of 2017.
The new tissue machine will increase the production of the four existing tissue plants: Botticino - LU, Bagni di Lucca - LU (that already houses a Toscotec MODULO-PLUS), Fabbriche di Vergemoli - LU and Lanciole - PT and the converting facilities of Toringo - LU and Socciglia - LU. Currently the production capacity of EuroVast Group is over 110.000 tons/year.

GERMANY

High-Performance Handkerchief lines from a single source by Senning

SENNING has just installed and commissioned another high-performance Handkerchief Line S.PM 805 + 662 TG at one of our German customers, a well-known producer of tissue products. SENNING implemented special technical options, tailored to the customers' requirements of machine handling and production.
The Handkerchief Line S.PM 805 with integrated labelling or taping unit and together with Bundling Machine 662 TG or 660 TG-70 guarantees a production speed of 4.000 tissues, 450 single packs and 75 handkerchief bundles per minute.
With this complete solution, SENNING is providing reliable and innovative German technology, and setting a further state-of-the-art standard for the local market.

CZECH REPUBLIC

Gapcon Tissue S.R.L. joins the Papcel Group of Companies

At the end of 2016, the Czech supplier of papermaking technology, PAPCEL, acquired the Italian company GapCon tissue S.r.l. with the aim to strengthen its market position for production of not only tissue papers.
In the last three years, the company PAPCEL realized the acquisitions of several competing companies from Western Europe: the Italian group Comecart (Burgo Group), the French company ABK Machinery and the Spanish company Gorostidi, thus significantly strengthened its market position. This year, PAPCEL plans to reach the revenues level of 1.7 billion CZK.
GapCon will become the competence centre for research, development and delivery of tissue machines. The synergy of the companies will allow extending the distribution network, increase direct sales and the number of reference projects.

POLAND

Abek invests in a new Tissue Paper Plant

Abek sp. z o.o. is investing PLN 14.2 million (EUR 3.2 million), in a new production facility in Drawsko Pomor-skie, in Poland's Western Pomerania region.
tissue paper maker Part of the investment is financed by the European Union, which will provide close to PLN 6.4 million (EUR 1.4 million).
Abek is located in Mierzyn, in the country's north-western part, about 508 km from Poland's capital Warsaw.

SWEDEN

Andritz acquires Franssons Recycling Machines

Franssons Recycling Machines is a global pioneer in manufacturing and development of machinery for treating waste, wood, and biomass as well as for recycling plastic, paper, and cardboard. Franssons has been an established und experienced supplier of industrial shredding and recycling technologies for 70 years, with many references around the globe.
The well-known and proven products and solutions of Franssons will be assigned to ANDRITZ's Recycling product group (part of the Pulping and Fiber Systems Division, PULP & PAPER business area), further complementing its product offerings in recycling, which extend from refrigerator and electronic waste recycling to reject systems for the pulp and paper industry. ANDRITZ is thus able to provide its customers with even more comprehensive solutions and services in the recycling sector.

FINLAND

Metsä Tissue has become fully owned by Metsäliitto Cooperrative

Metsä Group's parent company Metsäliitto Cooperative has purchased Mr. Jozef Antosik's 9 per cent ownership share in Metsä Tissue Corporation through a share acquisition completed on 2 February 2017. As a result of the transaction Metsäliitto Cooperative owns the entire share capital in Metsä Tissue Corporation.

UK

SCA strengthens its Tissue Business in the UK

SCA is investing in a through-air drying (TAD) machine at its tissue plant in Skelmersdale. SCA has also decided to close an older tissue machine in Stubbins and signed an agreement to divest its tissue plant in Chesterfield to Sidcot Group Limited. Following the investment at the Skelmersdale tissue plant of approximately SEK 160m, the production capacity of TAD mother reels will be 28,000 tons.
The cost for closing the older tissue machine in Stubbins, with an annual production capacity of 20,000 tons, is expected to amount to approximately SEK 120m. Approximately SEK 70m of these costs are expected to impact cash flow.
Sidcot Group Limited will pay a consideration of approximately GBP 3m (approximately SEK 35m) for the production facility in Chesterfield. The facility produces mother reels but has no converting capacity. SCA will have no internal need for the type of mother reels produced at the plant. The annual production capacity is 31,000 tons. An impairment loss of SEK 10m will be recognized as an item affecting comparability in the fourth quarter of 2016. Closing of the transaction is expected in the first quarter of 2017.

Sofidel starts up new tissue rewinder

The start-up of the latest-generation tissue rewinder manufactured by A.Celli Paper and sold last year in the UK to customer Sofidel, internationally renowned Italian player and tissue market leader, was concluded on 25 January 2017.
In just 8 months, the machine, a rewinder Mod. 865

shafted in a 3400-mm format was built, installed at the Sofidel UK facilities in Lancaster and started up to the full satisfaction of the customers who signed the acceptance certificate.

INDIA

Nobel Hygiene expands capacity

According to The Hindu, Nobel Hygiene plans to expand its capacity by setting a new plant in northern India to meet the growing demand for adult and infant diapers in the country, reports The Hindu.

"We have seen the demand for adult diapers growing from zero in 2000 to approximately 10 crore pieces in 2016," said Kamal Kumar Johari, managing director, Nobel Hygiene. "Besides, the baby diapers market is growing at 25-30% a year. So, we are planning to set up a new factory in North India, either in NCR Delhi or in Uttar Pradesh this year."

Nobel Hygiene will invest 25 crore in the new manufacturing unit. The company already operates six manufacturing lines with fully-automated machines at a factory in Nashik in Maharashtra. The unit manufactures adult and baby diapers, underpads and baby diaper pants. Nobel Hygiene has two brands: Friends for adult diapers and Teddyy for baby diapers.

Disposable hygiene market in India is estimated at 6,000 crore. The adult diapers market is estimated at 350 crore at MRP level while the baby segment is worth more than 5,500 crore. The adult diapers market is growing by 18 to 25% in the cities while in the rural areas the growth in the range of 2 to 10%. The Indian market is dominated by Procter & Gamble, Kimberly-Clark and Unicharm of Japan.

"The penetration level of diapers in India is 6% as against 35% in China. This leaves vast scope for growth," Johari said. The company is targeting to manufacture 20 lakh pieces of diapers per day by 2019 as compared to 10 to 12 lakh pieces currently. The company exports to Middle East, Africa, Central Europe and USA. Johari declared that the company was also planning to set up a manufacturing base outside India.

AUTOTECH Nonwovens announces successful start-up of the needlepunch line

ANDRITZ Nonwoven, part of international technology Group ANDRITZ, has successfully started up a complete needlepunch line – from webforming to needlepunching – supplied to AUTOTECH Nonwovens, India.

The ANDRITZ neXline needlepunch offers high production capacities – from opening/blending to finishing – and is able to handle up to 700 kg/h needlepunch fabrics, depending on the raw materials. AUTOTECH Nonwovens is a leading manufacturer of nonwoven fabrics for the automotive and filtration industries in India. Located in Surat, Gujarat.

CHINA

Two new Toscotec's tissue machines delivered to Vinda Paper

In December 2016, the Italian supplier Toscotec S.p.A. has delivered two tissue machines, TM 3 and 4, to Vinda Paper (Zhejiang) to be installed at its Longyou mill. The machines are scheduled to begin installation in the spring of 2017 and complete start-up in mid-2017.

With these two new machines, TM 3 and 4, Vinda Zhejiang mill is expected to achieve a total production capacity of 210,000 tons/year.

Following start-up in 2016 of other three Toscotec supplied machines in Guangdong and Shandong provinces, with a total production increase of 90,000 tons/year, the Vinda Group continues uninterrupted its strategic growth in a period of slowdown for the Chinese market. The new tissue machines delivered to Vinda Zhejiang will bring a further increase of 60,000 tons/year.

Taison Group orders 4 of tissue rewinders from A.Celli

Shanghai Taison Pulp-Making (Group) CO., LTD ordered 4 of tissue rewinders from A.Celli to be installed in its Jiangxi mill site.

These new tissue rewinders have a 5600-mm format

and a working speed of 1000 mpm; they are equipped with 4 unwind stands, calendar, slitter system, winding system, dust removal system, etc.
So far, A.Celli Paper has supplied 1 tissue machine line and 14 rewinders to Taison Group. The Tissue Machine Line, with its 2850-mm format and a design speed of up to 2000 mpm, is located in the Chongqing Tongnan mill and is running smoothly; 5 paper rewinders are located in the Zhejiang Haiyan mill; two 5800-mm paper rewinders are located in the Anhui Maanshan mill; three 5600-mm tissue rewinders will soon be installed in its Guizhou Chishui mill, and these 4 newly ordered ones will be installed in its Jiangxi Jiujiang mill in 2017.

Four tissue lines started up at Lee & Man Paper Manufacturing

Lee & Man tissue line start-up team

Four Valmet supplied tissue lines has been successfully started up at Lee & Man Paper Manufacturing's Chongqing mill in China within three months. The new lines, with a combined capacity of 240,000 tons of tissue which are designed for production of high quality tissue products with low energy consumption, were all producing sellable paper from the very start.
Previously Valmet has installed an Advantage DCT 200 tissue line at the same mill in 2015. All five machines are equipped with advanced tissue technology to reach high quality with lowest possible energy consumption.
The new tissue machines have a width of 5.6 m and a design speed of 2,000 m/min. They will have an annual production of 60.000 tons each of toilet and facial tissue per year, using virgin wood pulp and bleached bamboo fiber as raw material.

USA

A new tissue rewinder for Sofidel America

A.Celli Paper has recently concluded an order for a latest-generation rewinder model E-WIND® with the Italian group Sofidel for their facility in Circleville, Ohio, USA.
Sofidel America was founded in 2012 when Sofidel purchased Cellynne - a tissue paper manufacturer for Consumer and Away-from-Home business - and it is now operating in 7 states (Florida, Wisconsin, Nevada, Oklahoma, Pennsylvania, Mississippi and Ohio where a new integrated plant is under construction).
The tissue rewinder model E-WIND® T200 has a 5600-mm format and a working speed of 1600 mpm. The machine, whose start-up is scheduled in Q1 2018, will guarantee the Sofidel Group the opportunity to work and handle structured webs.

MEXICO

A complete turn-key project to Grupo Corporativo Papelera

In October 2016, A.Celli Paper received an order confirmation by Grupo Corporativo Papelera for the supply of a high-speed Tissue Machine with a production capacity of 34,000 tonnes per year (110 tonnes per day).
The investment is part of the Mexican Group's growth plan that aims at an important increase in production capacity.
The new tissue machine has a 2,650-mm paper width at the pope reel and a maximum operating speed of 2000 m/min, Grupo Corporativo Papelera S.A. de C.V. is a leading manufacturer of private label tissue products in Mexico, which was created by a group of leading Mexican entrepreneurs in transportation consulting nationwide.

SCA strengthen tissue operations in Mexico and baby diaper operations in Europe

To further strengthen competitiveness and enable future growth in the tissue operations in Mexico, SCA has decided to invest about USD 105m (approx. SEK 950m) in one of the company's facilities in the country. To strengthen its baby diaper product offering in Europe, SCA has also decided to invest about EUR 40m (approx. SEK 380m) in facilities in Europe.
The investment in Mexico will support SCA's high-quality tissue offering under the Regio brand. The investment is aligned with the company's strategy to streamline production and secure capacity for future growth in order to increase value creation in the Tissue business area.

GapCon delivers new tissue machine to Copelme

In February 2017, the Italian GapCon tissue S.r.l., member of the PAPCEL Group, signed a contract with the Bolivian paper producer Copelme S.A. to supply a new tissue machine.
The new paper machine will be installed in a new production plant, which is located in a newly established industrial park in Santa Cruz de la Sierra.
The paper mill Copelme S.A., part of Grupo Mendoza de Inversiones, is the leading Bolivian tissue paper manufactures with its brand NACIONAL. GapCon tissue S.r.l. will supply an advanced tissue machine technology with Crescent Former. The machine with a width of 2,760 mm, an operating speed of 1,600 mpm and a capacity of 85 tpd, will produce toilet aper, napkins and kitchen towels.
The new tissue machine start-up is scheduled for mid-2018.

ARGENTINA

Papelera Samseng boosts tissue capacity

At the end of February 2017, the Italian company GapCon tissue S.r.l. commissioned a new paper machine EconSOFT™ ERS (Energy and Resource Savings) for production of tissue paper in the paper mill Papelera Samseng S.A. in Argentina. The paper machine is operated at the company's pilar plant in Buenos Aires.
Papelera Samseng S.A. was founded in 1993 and is one of the leading producers of tissue paper in Argentina. The new paper machine width on reel is 3.450 mm and the operating speed is 1.800 m/min., with a production output of 145 tpd. The machine concept offers a wide range of tissue papers to be produced. The unique technical solution offered by GapCon will shorten also the maintenance time. It is the best alternative for upgrading of existing paper machines with the aim to raise the production, reduce energy consumption and significantly increase the paper quality.

BRAZIL

Mili orders the third and fourth OMET line for napkins

Mili Tissue in Brazil is a true wonder: continued growth from 1983 to the present, with high regard to environmental impact and to the happiness of the consumer.

One of Brazil's largest manufacturers in the field of hygiene and cleanliness, a true industrial giant that grows from year to year, exponentially increasing production volumes, with production facilities as large as an entire town. Mili is the market leader in Brazil for various types of products, among which toilet paper rolls, paper napkins, sanitary towels for intimate hygiene and baby diapers, up to several products for cleaning the home.
Founded in 1983 in Três Barras, a town located 170 kilometres from Curitiba, the little toilet paper rolls factory grew and developed during the eighties. In the nineties, it diversified its product range by launching the production of napkins (1992), sanitary towels (1994), diapers and disposable towels (1998,) ending with opening two more production sites in Curitiba (1991) and Maceiò (2008).
Mili was the first company in Brazil to produce toilet paper in 60 metre rolls (2003) and two-ply (2008), also offering the market adult diapers in 2011.
Since 2001, Mili has established a distribution centre in Curitiba, positioning itself strategically and mainly on the increasing large-scale retail market: rapid and precise delivery of the products to all sale points, regardless of distance and location, has allowed Mili's consumer products to penetrate the entire national market reaching more and more consumers.
Today in the industrial complex of Tres Barras (Santa Caterina), production site of napkins, paper towels, rolls of single and two-ply toilet paper, there is great attention to environmental impact, which results in recycling more than 10,000 tons of paper per month (the largest health recycler in Brazil). This value translates into preserving an amount of wood per month that is equivalent to a surface area of 36 soccer pitches!
Thanks to extensive research in the field, today Mili is able to reduce the production of waste by 80% and to use less than half the water compared to normal standards for the production of paper (8 litres of water per kg of paper compared to 15-20 litres normally used). Mili also has painstakingly designed a water treatment system that not only meets standard law requirements, but allows the water to be recycled.
At its headquarters in Curitiba (Paranà) baby diapers,

OMET International Sales Manager, surrounded by Mr. Valdemar Lissoni and his daughter Eliane, at OMET factory.

sanitary napkins for adults and for personal hygiene are also produced. Quality control is a continuous process in Mili' plants, starting from receipt of raw materials and only ends with the end consumer's approval.
As proof of the excellent results achieved by Mili, at the beginning of 2016, for the fourth consecutive year, the Brazilian company received the prestigious Abras award (Brazilian Association of supermarkets) which rewards the best-selling brands in Brazil, according to sales research conducted by Nielsen.
Mili's attention to market demands has pushed the company to make large, long-term investments in recent years, with the expansion of its production lines and range of products.
The collaboration between OMET and Mili began in 2014 with the Brazilian company purchasing an OMET GN100 line, i.e. a complete TV840 line including packing system, for the production of packaged napkins. The results obtained with OMET machine met Mili's expectations, enough to buy a new GN100 line immediately after the initial installation and to recently finalize the order of two other GN100 lines expected for the beginning of 2017.
Thanks to the quality and reliability of OMET machines, Mili has recently launched a new line of premium, two-ply napkins "Mili Bistro"', to meet the growing demand of the Brazilian market for higher quality consumer products, which result in greater softness, smoothness and absorption capacity. ■

African Investments and Business Forum

The African Investments and Business Forum, which took place between 3rd and 5th of December 2016, at the International Conference Centre in Algiers, was a networking opportunity for entrepreneurs, producers and consumers from all fields, as well as for investors from the private and public sectors in the African continent. Under the patronage of His Excellency the President of the Republic of Algeria, Mr. Abdelaziz Bouteflika, "Le Rendez-vous d'Alger" is the largest Investment and Business Forum organized in Algeria which brought together more than 2000 entrepreneurs of 42 countries; representatives from governments and public bodies, investors, experts and media.

Over a hundred international economic agreements were signed covering different sectors; including energy, finance, infrastructure and agribusiness; being the pillars of the Forum's meeting.

The trade between African economies is being developed through the increase of exports and the promotion of domestic products.

It is in this perspective that the Forum has sought to provide the appropriate solutions by allowing the Algerian companies to interact with other African companies in terms of know-how, technology and experience sharing.

THE WORKSHOP

Faderco, a leader in the personal care industry in Algeria, hosted a workshop where experts shared information about new paper manufacturing processes and technologies and offered an in-depth view of the paper market in the world.

The workshop also discussed prospects of the production of virgin pulp jumbo reels and paper converting in Africa.

Through its workshop, Faderco aimed to present the participants with a new perspective on the paper market and its evolution in Africa, as well as highlight Algeria's role as a major player in the paper industry.

About Faderco

Founded in 1986, the company is today the leader of the sector in Algeria, and has more than 1600 employees spread over 3 production sites.

Through its distribution subsidiary DIFEX, it ensures and develops an internal distribution network allowing direct coverage of 70% of the national territory.

Faderco also holds ISO 9001 certification since 2010, guaranteeing the quality of the manufacturing processes of its products.

Faderco has developed seven strategic business areas for a total of 10 brands: Awane, Bimbies, Cotex, Uniform, Coty'lys, Viva, Bello, Dada, Domino and Bimbo.

The company places major focus on national non-hydrocarbon exports of jumbo rolls, currently covering 80% of the national demand by producing 30,000 tons of paper reels per year. Export countries include Côte d'Ivoire, Nigeria, Greece, France, Spain, Ireland, etc.....

As for finished products, Faderco aims to reach the figure of 400 tons of finished products exported monthly in 2017, it currently covers 35% of the national market demand for hygiene products. Faderco also operates converting factories in 6 countries across Africa (Tunisia, Morocco, Mauritania, Mali, Libya and Ivory Coast).

*Prime*LineCOMPACT
COMPACT tissue lines ready to go

Choose one COMPACT tissue production line based upon your capacity requirements. From the stock preparation to the parent roll, including automation, ANDRITZ can deliver a full tissue making system with the *Prime*LineCOMPACT tissue plant concept. To meet different customer requirements several types of COMPACT concepts, representing production capacities from 63 t/d to 125 t/d, are available.

Walid Daniel Dib
Contributing Editor, METissue
Based on METissue's President, Bechara Michael Dib presentation at the African Investments and Business Forum 2016

Africa: Emerging-market or driver for global growth?

Fatos explains that the diapering period could vary It is widely speculated now that global key developed markets such as the US and UK have begun facing growing political uncertainty and a plateauing in their commodity markets and profitability, possibly prompting investors with a risk appetite to pursue venture opportunities throughout global emerging markets, not the least interesting of which is Africa. The second largest and second most populous continent – which comprises 54 diverse countries and a total population of more than 1.2 billion – boasted an economic forecast of 5% growth per year in recent years, a number which only seems to be climbing upwards, despite the associated risks for tighter global financial conditions and the geopolitical circumstances of some of the more fragile African states.

THE AFRICAN SCENE

Of all the African countries, Algeria has the biggest surface area, covering 2,382 Km2 and occupies around 7% of Africa, and boasts a steadily growing population of 39 million.

Nigeria – who is also by far Africa's biggest producers of oil with over 2.5 million barrels produced per day – has the largest population in the continent, with around 190 million people living in it.

Africa has the highest rate of population growth in the world, growing at an excess of 2% every year. According to the United Nations Population Division, more than half of global population growth is expected to occur in Africa by 2050. if UN projections bear out, the continent will add 1.3 billion people to the global population by 2050 which is projected to reach 2.4 billion people. It is also expected that after 2050, Africa will be the only major area still experiencing substantial population growth. It should be noted that Africa's population is not only the fastest growing; it is also the youngest in the world. The diverse continent's population is tech-savvy, brand aware, and quality conscious.

As one of the world's fastest-growing consumer markets, McKinsey expects household consumption to grow at an average 3.8% a year to reach $2.1 trillion in 2025, fueled both by population growth and rising incomes. By 2025, approximately 90 million people will be added to the consumer class while the African consumer-facing industries are expected to grow by more than $400 billion by 2020, as per McKinsey. The consumer-facing market is heavily concentrated in 10 out of the 54 African countries – Algeria, Angola, Egypt, Ghana, Kenya, Morocco, Nigeria, South Africa, Sudan, and Tunisia – which accounts for around 81% of Africa's private consumption

The continent offers promising opportunities and vast potential for business, however, due to a lack of proper market research, business leaders and investors are hesitant about investing in Africa, although there is serious profitability to be made by being the first to enter the virgin markets scattered across the continent, especially in the tissue paper industry.

TISSUE PAPER MARKET IN AFRICA

850,000 tons of tissue paper are produced annually in Africa. With new tissue mills starting up, this number is expected to rise by 220,000 tons in 2017 alone. By early 2018, Africa stands to produce more than 1 million tons of tissue paper per year.

Tissue production is heavily concentrated in Algeria, Egypt, Kenya, Morocco, Nigeria, Tunisia, Tanzania, and South Africa. On a smaller scale, Ghana, Madagascar, Uganda, Zambia and Zimbabwe are beginning to pick up the pace in local tissue mills, a challenging endeavor to wean off importing paper-based products, with hopes to have a larger role in their own domestic markets.

Country	Tissue Mill	Machine
Algeria	2	2
Egypt	8	14
Ghana	1	1
Kenya	3	3
Morocco	2	3
Madagascar	1	1
Nigeria	15	18
South Africa	18	22
Tanzania	1	1
Tunisia	2	3
Uganda	1	1
Zambia	1	1

P&P 2016 / Bechara-Michael Dib

Tissue mills distribution in major tissue producing countries in Africa

Strictly from a quantitative stand-point, South Africa currently dominates tissue production in the continent. In South Africa, there are 18 different mills with 22 machines, and it is currently exporting tissue products to neighboring countries like Botswana, Zimbabwe, Namibia, Mozambique, Zambia and Swaziland.

In North Africa, Egypt holds the highest number of tissue mills and machines, and is currently operating 8 mills with a total of 14 machines.

The past decade has shown a considerable growth in consumption of tissue paper, which was spearheaded by end-user consumption in North Africa, followed by South Africa. East and West Africa are picking up the pace as well, with smaller to mid-tier mills controlling the domestic markets and exporting to nearby countries.

Governments such as Nigeria's have banned the importation of finished toilet rolls, serviettes and facial tissues since 2004, opening up a lucrative market for domestic competition, where demand for tissue surpasses supply.

The government of Ethiopia will pump an equivalent of 2.6 billion ETB or 130 million USD into the pulp and paper industry in the next five years. As the demand for paper products will rise from 200,000 tons per year to 400,000 tons per year within the next five years. In this respect, Yekatit Pulp and Paper is investing in a new pulp and paper mill, which will produce 15,000 tons of tissue paper annually. The mill will be the first privately owned company to produce jumbo tissue rolls locally. The project is expected to start operation by mid-2019.

Since January 2017, three new tissue machines have been installed and commissioned in South Africa, along with two second hand machines to follow through by mid-2017. Algeria and Egypt are also expanding their presence in the North African tissue export market. Both countries planning to install a new tissue machine each by the end of 2017, with an intention of exporting to nearby Mediterranean countries.

TISSUE BUSINESS POTENTIAL

The opportunities present in domesticating tissue paper production in Africa are clear, especially given the above-mentioned surge in Africa's population and private consumption; various types of business potentials are burgeoning in different parts of the continent for those aspiring to capture these opportunities: where

- While some companies might target large cities where 40% percent of the African population live and urban spending is increasing at double the rate of rural spending, others might prefer to bypass large cities and establish roots in mid-tier, less urban cities, which pose less competition, offer better profit margins, and a more accessible territory for starting up a tissue paper business.

- Certain countries across the Northern and Western side of Africa may have a head start, as energy, water, and manpower is more readily-available, allowing them to expand their business towards tissue mill installation, commissioning, and operation plans with lower risk.
- The resilient, low-risk market means that the smaller, more urban countries in Africa still stand a chance to compete in the local and domestic tissue mill installations, as many major investments are piloting small tissue machine projects, which are low cost investments compared to other types of paper machines.
- Smaller or poorer countries may invest in second hand tissue mills, or modify existing Fourdrinier machines into tissue paper production.

Given how diverse Africa is, it is important to note that the above measures may not apply to South Africa or Nigeria. South Africa is very competitive dues to the existence of major tissue producers; existing mills are in constant efforts to seek innovative solutions, develop or enhance their products offerings and increase machines' efficiency to stand against their competitors. In Nigeria, the tissue production capacity dropped and the country's consumer spend is constrained due to currency depreciation.
Investing in tissue production is relatively a profitable venture for investors due to many factors:

- Initial investment is correlated with production procedures which can vary from simple to complicated
- Simple organisational structure
- The ability to expand product offerings
- Product's quality and cost are versatile to meet different markets requirements
- High profit on finished product
- Rising demand
- A consumer-staple business

Raw material	Availability
Virgin Pulp	Imported
De-Inked Pulp	Imported / produced locally
OCC	Imported / collected locally
Office waste	Collected locally / Imported
Mixed Waste	Collected Locally

P&P 2016 / Bechara-Michael Dib

Raw material availability in Africa

While mass production of standard tissue paper is a profitable venture, mainly due to its consumer demand and low initial investment possibility, it is not the only viable option to make a profitable business. In fact, with a few modifications, existing African paper mills can easily shift their current production into the field of manufacturing Crepe paper, MG paper, or specialty tissue paper with variable grades.
Investors who wish to play it safe need to keep in mind that low production capacity tissue machines are widely available, and even these are capable of producing tissues with a higher profit margin than most other paper grades. Once a deeper understanding of the local and regional market is made, existing producers may pursue multiple special tissue grades, such as high quality printed napkins, the use of detergents inside towels, or even napkins with lotion applied on the tissue paper's surface.

RESOURCE AVAILABILITY

Energy: Africa has a huge discrepancy in electricity rates across the continent. For example, tariffs in South Africa and Zambia are among the lowest in the world, while prices in Djibouti and Gabon are among the highest globally.

Water: available in the Western Africa but not in the rest of the continent. It is not as readily available in other parts, but can possibly be sourced with the association of the governments in Sub-Saharan and Northern Africa.

Raw material: such as virgin pulp and de-inked pulp are predominantly imported, while OCC, office waste and mixed waste are often recycled locally.

Manpower: available locally at very cheap prices, due to the young median age and growing unemployment rates in some of the emerging markets within Africa.

Machinery: the latest technologies used in tissue paper production are not yet widely available; except from the North part of Africa, most of the continent is a virgin territory in this aspect, meaning that international financers with a risk appetite to invest in the latest technology can have a head start against local competitions.

A GLIMPSE AT THE CHALLENGES

While investors expect to make good profits in the paper manufacturing industry in Africa, picking the right paper grade and the right time and location is imperative to avoid the associated regulatory and strategic risks.

A case study worth noting is the Kenyan-based paper manufacturer Pan Paper, now known as Rai Paper, which owned one of the largest newsprint and tissue mill in East Africa. Poor cultural understanding, lack of professional management, and raw material procurement caused the scope of the paper mill's output to drop throughout the 2000s, leaving behind thousands of locals who previously depended on the mill. This was followed by a 2 billion Kenyan Shilling (around USD $19.5 million) investment by the government through the ministry of industrialization, in a failed effort to revive the plant, which unfortunately resulted in it shutting down completely in 2009.

But it's not all doom and gloom for Pan Paper, as the company has since then recovered after an 11 year hiatus. The company has recently been injected with a large investment from the Rai investments group, and the tissue mill has been operational as of 17th February 2017 under the name Rai Paper.

THE BOTTOM LINE

With globalization and internet access on the rise in Africa, The African consumer is now more than ever brand conscious, and personal hygiene has become a priority to every household.

Because it is difficult to lump such a diverse and complex continent into one generalization, business ventures must understand the local culture inside-out. Choices made to invest in African paper mills must offer adequate value proposition in order to stand out in most of the continent's nascent markets.

It is also important to conduct a thorough risk assessment of all the interconnected aspects of this industry, from shipping and logistics constraints to possible political instabilities and the willingness of local authorities to cooperate. Overall, our research indicates that the African market is open to tissue paper importation and exportation, and the possibility for growth far outweighs the risks involved. ■

Resources	Availability
Investment	Available locally
Man Power	Available locally / imported
Technology / Know how	To be imported / Not available locally
Water	Available locally in the west / could be produced
Energy	Available locally / high cost in some countries
Raw Material	Imported / available locally (waste recycling)

P&P 2016 / Bechara-Michael Dib

Breakdown of resources availability in Africa

A look at the future of the tissue industry in the Middle East and North Africa

Nuqul Group's Fine Hygienic Holding is one of the major players in the tissue business in the MENA region, operating four tissue mills in Jordan and Egypt with a combined annual tissue capacity of 155,000 tons. In 2016, the Holding announced a $90 million investment in a new tissue production line at Al Nakheel mill in Abu Dhabi, UAE. PM5 is expected to come on stream in the 3rd quarter of 2017.
Salim Karadsheh, CEO of Fine Hygienic Holding, updates METissue on the progress of the project and shares his insights on the tissue market in the MENA region.

MET: ***Could you give us a short description/ scope on your new project in Abu Dhabi, Al Nakheel?***

"Al Nakheel Paper Mill will produce over 50,000 tons per year of jumbo reels to supply the bulk of FHH operations in the GCC markets while Jordan operation supplies the Levant and the remaining needs in the GCC. Egypt operations supply FHH needs in Africa and serves our exports clients that have for years entrusted FHH to provide them with the quality and volumes of tissue they need for their operations. Those clients are spread over several continents inside and outside the MENA region. The project will also be integrated with FHH converting operation in the UAE that supplies FHH consumer products in the UAE, Kuwait, Qatar, Bahrain and Oman."

MET: ***Why did Fine Hygienic Holding decide to invest in a new tissue mill?***

"FHH consumer product specifications are unique to FHH brands and as such FHH needs to maintain control over the volumes needed, the quality standards and the product development to stay pioneer in its markets. The current size of FHH and the forecast growth mandated an investment to build capacity owing to the lead time it takes from concept to market in such large projects. Having said that market dynamics soured since the decision on the investment and it will thus start-up a little bit too early."

> “the market balance will deteriorate over the coming years and prices will be further depressed”

MET: ***Is there any delay in the project?***

"The project started later than planned due to changes in the legislation and permitting procedures in Abu Dhabi and its time schedule was shifted forward from the outset. Since then the project is proceeding as planned. FHH is not impacted by the delay."

MET: ***Why was the UAE chosen as a location for the new mill?***

"FHH needed to build capacity in the GCC to become local to its markets; a study of available options, costs, freight from the centers of gravity of demand, legislation, labor considerations, investment environment and energy needs favored Abu Dhabi over other locations in the case of FHH and the project location was confirmed through a detailed concept study for FHH that was commissioned to 3rd parties confirming our choice"

MET: ***What is your view on the current market situation in the MENA region?***

"The MENA region has surplus capacities today and will likely continue to have surplus capacities in the coming 3 years. The regional demand growth has slowed down significantly since the turmoil started in some markets (most notably Libya, Yemen, Iraq and Syria), while other markets' growth has slowed down post drop in oil prices. In general consumer sentiment in markets that are directly or indirectly influenced by petrodollars has plummeted. The Saudi consumer for example is demanding lower prices and shifting towards lower cost options following the change of strategy by the Saudi government on matters like subsidies and investments. This state of affairs will pick up pace as KSA announces the second round of reform expected post Ramadan, as expatriates send their families to their original countries following the government decision to increase residence fees dramatically and as the GCC sales tax becomes a reality in 2018. Jordan enjoys a saving from oil price drop but pays a heftier price for the drop in GCC tourism, employment opportunities in the gulf, investment and aid from the oil rich countries such as KSA. Lebanon sees similar impacts. Egypt on the other hand suffers from inflation, drop in tourism, reduced FDI and stagnant Suez Canal traffic. Iraqis consumer spending is also dropping as less income is derived from oil exports and more share of the country's income goes to fund the fight with ISIS.

At the same time the number of firms supplying the markets has increased with small players and informal suppliers producing basic products. We see forged imitations of our brands in more than one market encouraged by the anarchy in some markets due to the aftermath of the Arab Spring and growth in terrorism. We see unorthodox imports from countries that suddenly found a cost advantage from their currencies devaluation in markets that have local currency peg to the USD, aided by lower freight cost on cheaper oil prices, while exports to Europe are challenged by the devaluation of the Euro and GBP.

To put the balance in perspective, the MENA markets growth is about 1 full size machine per year while the announced new projects will bring at least 3-years’ worth of growth by the end of 2018. This means that the market balance, already in surplus, will deteriorate over the coming years and prices will be further depressed while the commodities prices are heading North at this time.

FHH decisions are driven by internal needs and demands. The bulk of FHH production will be internally supplied to FHH own converting operations. Being the largest player in the MENA region allows FHH diversity, brand positioning and economies of scale to weather the storm. As for other investors in the field, they must know of something we do not know about, or have export markets that eluded us"

MET: ***Many projects are starting up during this year; what would be the impact on the market?***

"The rules of supply and demand have never changed. An oversupply means that prices will drop towards zero. Along the price drop journey, new demand may come when a consumer that did not consume suddenly finds the price encouraging enough to start consuming, Along the same journey supply would shrink when one supplier is unable to sustain operations due to high cost, lack of cash or inability to invest in improving product quality to meet the new demand. Competition will become fiercer and margins will drop. New investment will take a break until the market finds its balance. We maintain close contacts with several competing companies in the region and can confirm that a few are really struggling to stay in business, while some have disappeared altogether. Most of those compete on price only and do not have consumer and market research, brand power, cash flow, product development vertical integration, talent, patents and economies of scale to compete otherwise. When the market balance is in over supply, competing on price can only head in one direction- South; to some players this means moving from profit to loss and then to negative cash flow. We expect that such a scenario will last 3 more years, yet with every announcement of new capacity we are pushing the forecast one more year. The latest news in March was of a Kuwaiti investment in Egypt- which if confirmed will push our forecast by another 1/2-1 year. Egypt already has about 300% overcapacity and recently received new investments from Handy and Hayat. Saudi will receive new capacity soon. The UAE is in huge overcapacity and is receiving some three new paper mills. North Africa is also in overcapacity while market growth in Libya, Tunisia, Algeria and Morocco is challenged by a mixture of war, terror, oil revenue loss and failing economic performance. GDP per capita in the Levant is negative meaning lower disposable income per person.

This can all change if terror and wars stop, governments succeed in reform, oil prices recover, tourism and investment return, closed borders open, and the economic cycle improves. Unfortunately, we have no facts on the ground to support such a scenario." ■

Following you will read METissue yearly report on the tissue industry in the Middle East and North Africa

Highlight of New Projects

Al-Nakheel Paper Mill in UAE: PM1: 60,000 tons/year Valmet TM. Startup: 2017

Star Paper Mill in UAE: PM1: 38,000 tons/year Recard TM. Startup: 2018

Crown Paper Mill in UAE: PM3: 65,000 tons/year Valmet TM. Startup: 2018

Hayat Kimya in Egypt: PM6: 70,000 tons/year Valmet TM. Startup: 2017

Handy – Alex Converta in Egypt: PM1: 24,000 tons/year Recard TM. Startup: 2018

PMI Algeria in Algeria: PM1: 28,000 tons/year Andritz TM. Startup: 2018

Azerbaijan Narmeh Paper Industry in Iran: PM1: 30,000 tons/year Recard TM. Startup: 2018

Zarrin Barg Persia Paper Industry in Iran: PM2: 60,000 tons/year Valmet TM. Startup: 2018

Take Note

Al-Faris Group in Saudi Arabia has contracted Papcel for the supply of a new tissue machine two years ago, but the machine is not installed yet.

Gulf Paper Industries Factory project in Saudi Arabia and Ackef Pack project in Egypt have also remained idle.

Current and Planned Tissue Capacities in the Middle East and North Africa

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Morocco	Sipat	PM1	600	1.8	5,000	Toscotec	1978
		PM2	1300	2.75	16,000	Toscotec	1995
	Jeesr Industries	PM1	2000	2.8	30,000	Metso	2013
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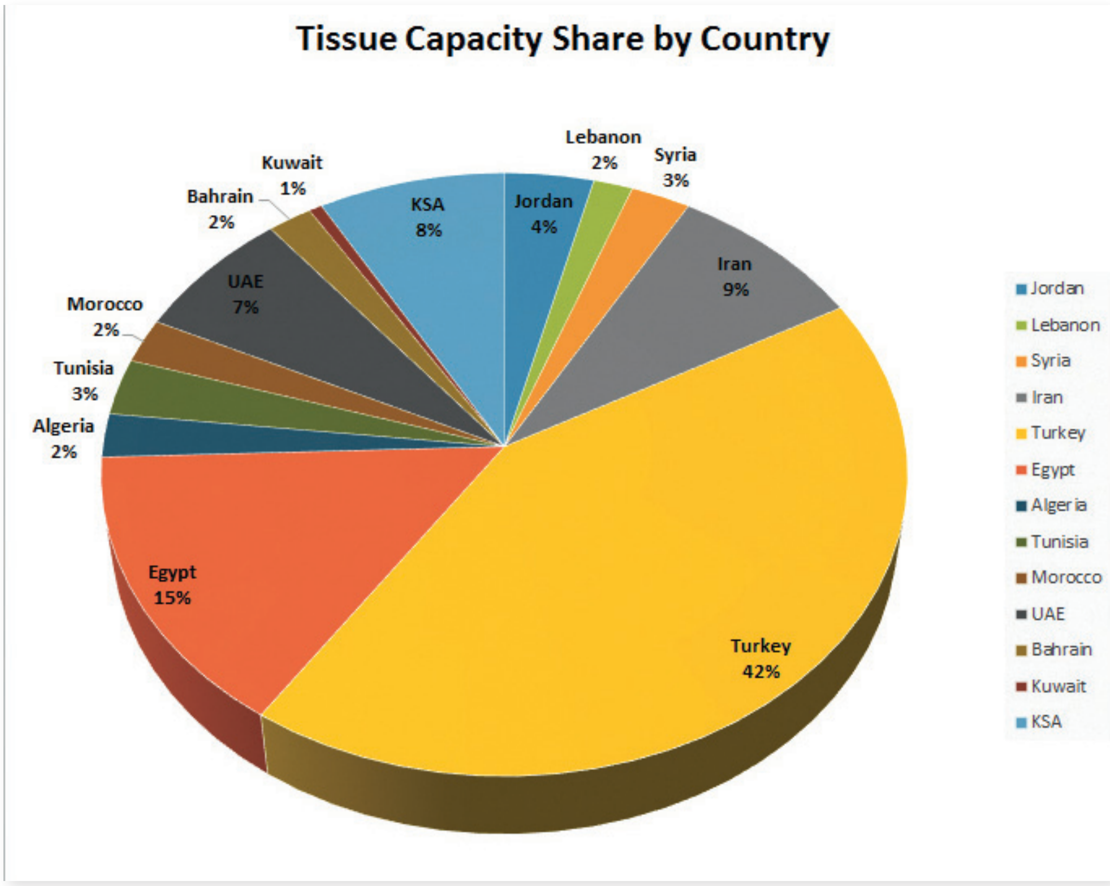
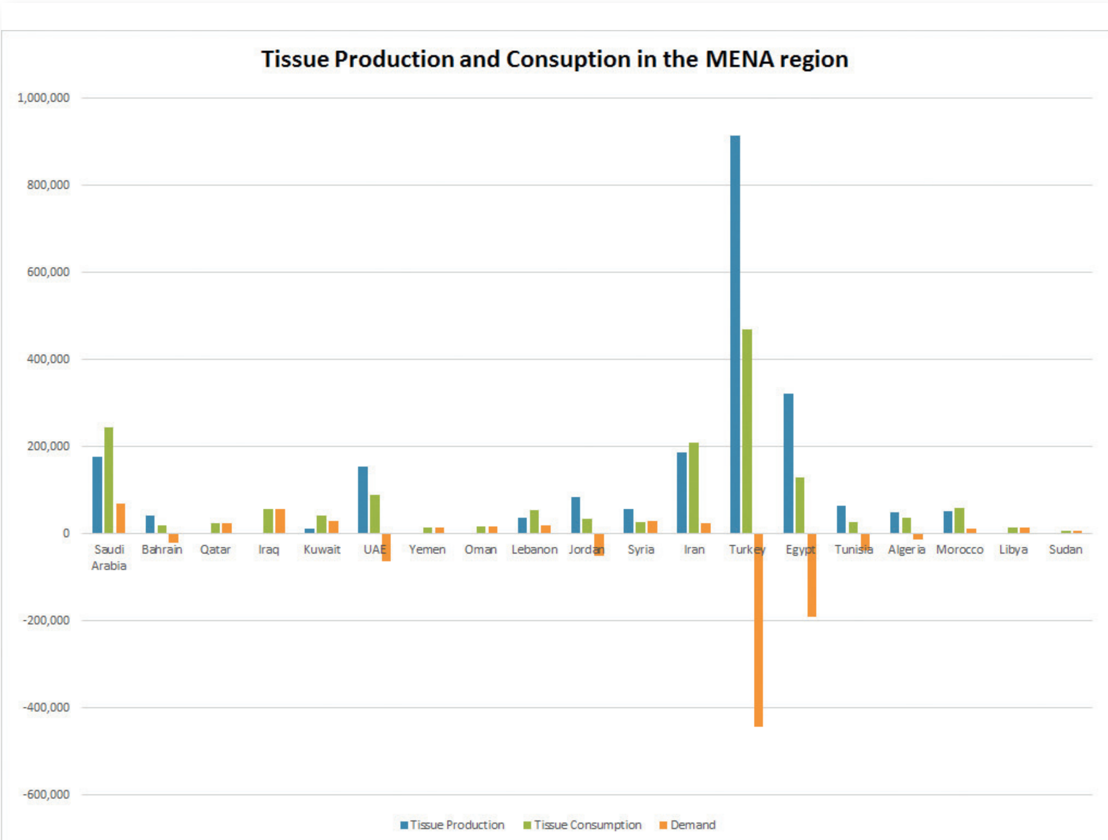
Tissue Production and Consumption





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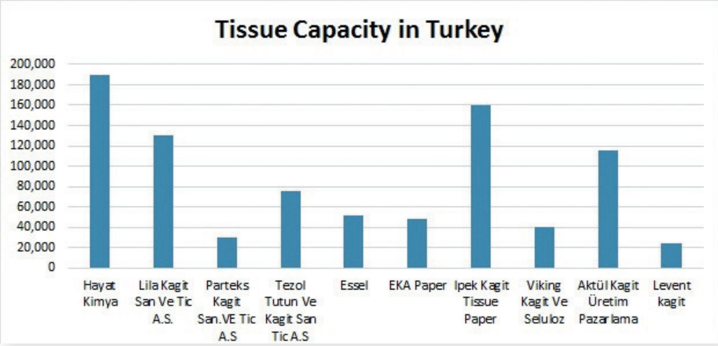
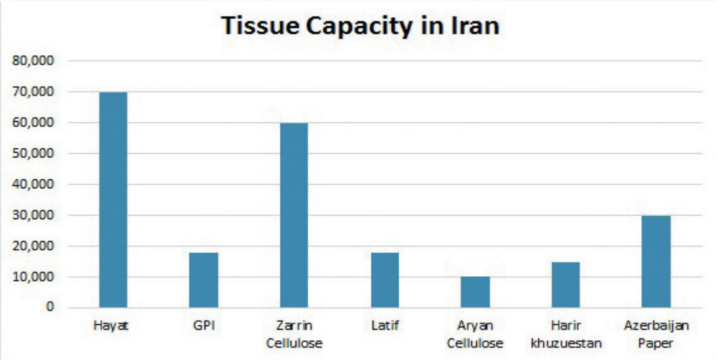
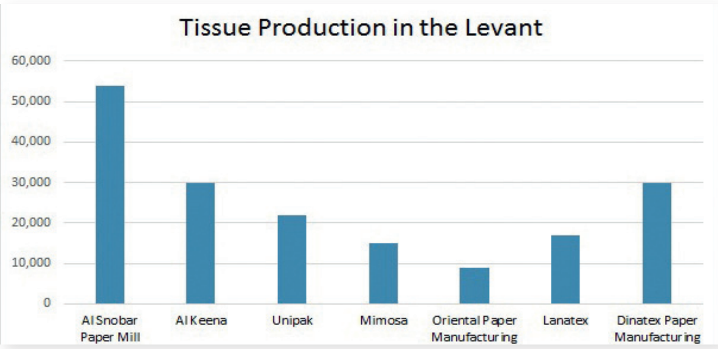
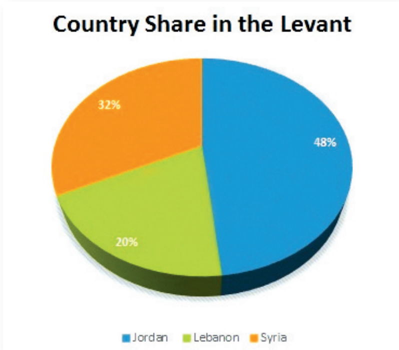
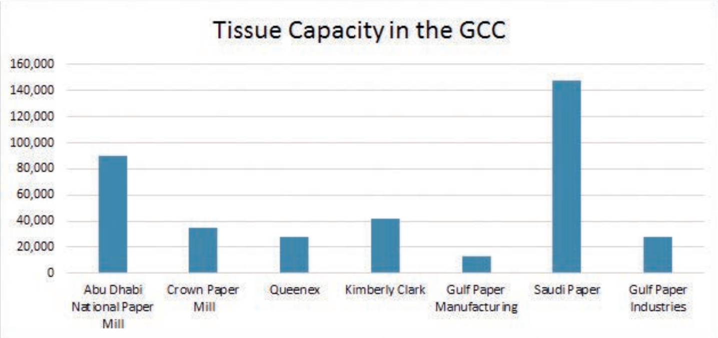
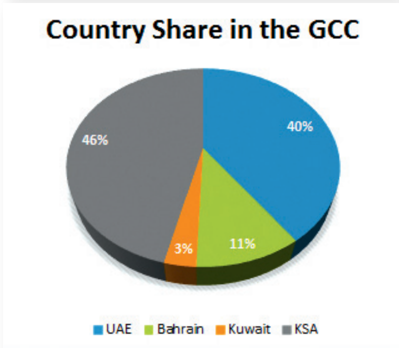


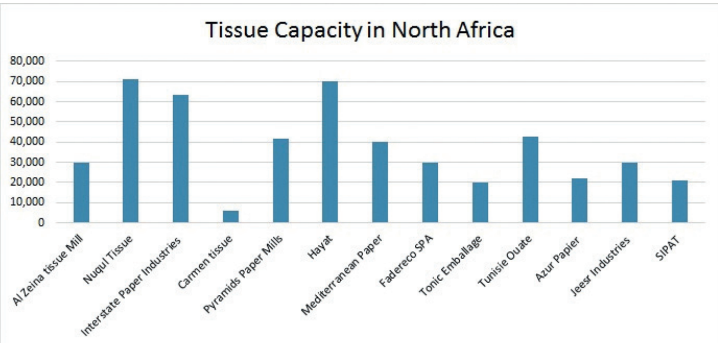


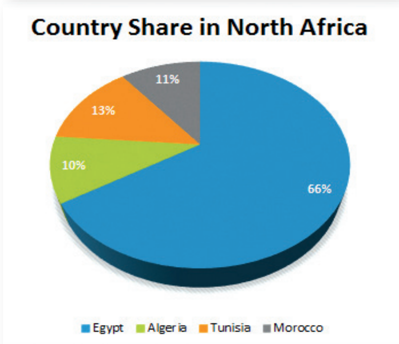












COUNTRY REPORT

Walid Daniel Dib
Contributing Editor, METissue

Enka Hijyen

Turkey's new diaper producer

Enka Hijyen, a new Turkey-based baby diapers manufacturer, is anticipating a stage of accelerated growth, with the resolute intention of being able to meet local and regional market demand for its services in the next few years.
What started out in 1928 as a small father-and-son store for selling automotive parts has now expanded exponentially into what is known as the Imam Kayali Holding, the parent company of Enka Hijyen, which boasts a diverse workforce of 700 employees.

"Enka Hijyen is now in the development curve. The products are very much appreciated in the market and the biggest challenge is simply reaching more and more customers," said Fatos Gunsel, Enka Hijyen plant manager, whose deep domain expertise contributed to the company's steady growth.

Fatos explains that the diapering period could vary from 24 to 30 month, and while the average daily diaper consumption in Europe is 4-5 units per baby, the corresponding value in Turkey is 3-4 diapers. "The number of diapers consumed per day and how long a baby wears a diaper are correlated with the average income level of the family. This means that higher income families tend to change diapers more frequently, and these families do not rush for toilet training as fast as middle income families."
The Imam Kayali Holding group ventured into the diaper industry in the first quarter of 2016, after

appreciating the complexity and profitability of the ever-evolving baby diapers market.

Today, Enka Hijyen is the holding group's manufacturer of baby diapers, according to Fatos, however, Enka Hijyen will also be soon producing adult incontinence, wipes and feminine hygiene products in order to complete the product portfolio of the company's hygienic articles.

Enka Hijyen's current onsite workforce is almost 90 employees, while the financial operations are managed by the parent holding company.

When asked about the current market stance of Enka Hijyen in Turkey, Fatos explained that "the company is still a newcomer to the hygiene industry, but the family has roots in the industry with the production of nonwoven roll goods," which has fueled Enka Hijyen's rapid growth.

She further elaborated on the company's current research and development projects, explaining that "Enka Hijyen works in close cooperation with raw material vendors and has a panel of family focus groups to test the products. The company's R&D team's results is influenced by these two information sources," indicating that most of the company's research is invested in perfecting a balance between performance and cost.

Since its establishment the company has perfected their diaper technology. "It is thinner, it performs much better in terms of dryness and liquid absorption each passing year", adds Fatos.

The most important challenge for surviving in this sector is identifying the end user's requirements. "different families have different expectations from our diapers," explains Fatos. For this reason, Enka Hijyen developed three brands to be able to serve all possible consumer demographics. The three products are: Paddlers, Cushy Baby, and Lulla Baby.

Fatos explains that "Paddlers were created to provide premium comfort and dryness". The diaper is designed to give maximum protection and provide a comfortable fit for babies. It features elastics ears, high absorption rates and retention capacity, as well as a cream lotion and a wetness indicator.

Cushy Baby diapers were mid-range diapers made for consumers looking for an affordable diaper without sacrificing quality. These diapers also feature elastics ears, cream lotion and a wetness indicator, along with good liquid absorption and retention capacity. This

line was designed for middle class consumers, and offers a comfortable, dry solution for a good value.

Lulla Baby is Enka Hijyen's economical baby diaper brand, which provides an elastic ear option, thus providing good comfort, decent performance at a budget.

Although Enka Hijyen offers its own three brands, a limited portion of its production capacity is reserved for private labels interested in purchasing and rebranding their diapers.

Fatos tells us that the Turkish diaper market is extremely competitive, but this does not constitute a threat to Enka Hijyen, as the company exports almost 95% of its diapers manufactured in the country. Even though there is still room for penetration within Turkey, Enka Hijyen has set very high expectations for itself, and the company is constantly building international partnerships, and currently exports both to neighboring countries and a wider international audience.

In fact, Enka Hijyen has its eyes set on dominating the surrounding region at first, but also covering distant places such as China. The current plan for the company's three diaper brands is to begin with penetrating markets that do not have excessive duties or taxes and other restrictions, and then expanding to tougher, more stringent markets.

Fatos explains that the company's state-of-the-art factory in Turkey's Gaziantep industrial zone currently produces an impressive 1,000 baby diapers per minute per production line. "Enka Hijyen's initial investment was about 27 million Euro and is just the first part of multi-phase project," she adds, signaling that this first phase currently has a production capacity of 800 million diapers per year.

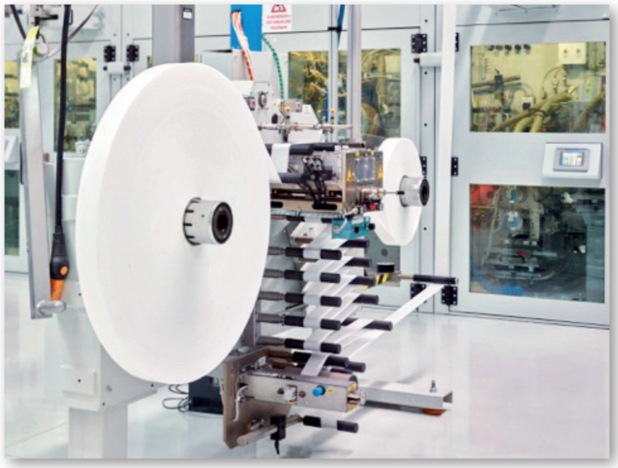
The factory in Gaziantep sources several raw materials for its baby diaper production, all of which – bar for two – are widely available in Turkey.

Enka Hijyen has an advantage of having the support of its sister company, General Nonwovens, which specializes in manufacturing of different nonwoven fabrics (spunbons, SMS, ADL, ATB) for the hygiene industry.

Having funded in-depth cost/benefit market research, Fatos proudly stated that all three of the company's brands are successful, as they cover all local consumer demographics.

The biggest influence on the price of diapers in Turkey is the number of steps between the manufacturer and the end user. That's why according to a recent market study, baby diapers currently rank online as the most item sold in e-commerce websites.

Regarding compliance with GMP and EU regulations,



Fatos explained that Enka Hijyen quality assurance and product safety teams make sure that the raw materials used comply with all regulations and restrictions for health use.

"Enka Hijyen's products pass cytotoxicity, skin irritation test and the products made can be sold to any market including EU and US. These tests are done periodically in both the dermatological and microbiological extent. Armed with this information, ENKA's R&D team continues their hard work to develop our products and improve customer satisfaction."

When looking at new technologies and baby diaper market trends, Fatos sees that the development of thinner diapers is being prioritized every day in most competing diaper manufacturers. Other trend setting ideas focus on softer products that let baby skin breathe.

Fatos is not worried about the global increase in energy prices, which have been relatively stable in Turkey, at least. "The lines at Enka Hijyen have state of the art equipment, with motors and drives that consistently produce the highest efficiency ratings". She further explained that the Enka Hijyen Engineering team is working around the clock on projects to reduce energy consumption and improve productivity.

The company is also constantly fine-tuning their systems to reduce raw material usage, increase efficient use of the energy sources, and is even considering the future use of renewable materials in their diaper manufacturing.

The near future is exciting for Fatos. She believes that within 5 years, Enka Hijyen's products will have a successful background in the markets the company serves. "Because, with almost 90 years of roots, Enka Hijyen has never relied on short-term profits and temporary business partnerships. For this reason, the company finds itself to be a solution partner of babies and mothers in their hygiene expectations". ■

Identical COMPACT twins? HAI!

"Hai" is Japanese for the English word "Yes!" Corelex Shin-Ei recently started up two identical ANDRITZ tissue machines at its greenfield mill near the base of Mount Fuji, 95 km from Tokyo. According to the President of Corelex Shin-Ei, the machines are "Robust. Efficient. Environmentally friendly. Easy-to-use."

The Corelex Group started as a machinery company, San-Ei Regulator, known today as Corelex San-Ei. In 1969, the decision was made to go into papermaking. That was the beginning of Corelex Shin-Ei. Today, the company makes toilet and facial tissue from recycled paper in Japan. There are also mills in Vietnam that sell toilet and facial tissue products to the local market.

"Our first product was Kurochiri, known as black tissue (although it was a gray in color), because it was the simplest and the least expensive kind to produce," says Satoshi Kurosaki, President of Corelex Shin-Ei. "It was produced from recycled newspapers and magazines. No deinking, just a pulper and a tissue machine."

This tissue machine, which had a suction former and cylinder design, was upgraded. Maximum speed was 1,050 m/min, and Yankee diameter was 12 ft (3.66 m). "In 2014, we made the decision to consolidate our production into one greenfield tissue mill," Mr. Kurosaki says. "There were financial incentives, since we paid rent for the location of the old mill and we paid taxes for a location in Fuji City center."

The greenfield mill is in Fuji City (eastern Shizuoka Prefecture), nearly at the base of Mount Fuji. It was constructed with three factors in mind: efficient production, the environment, and disaster management for the local region.

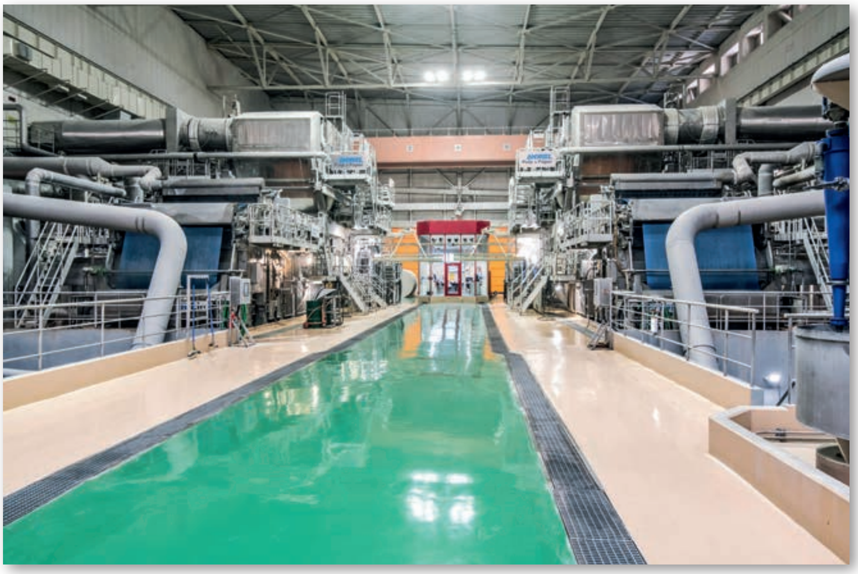
STRICT NOISE CONTROL

"We make every effort to adhere to all environmental requirements, and this mill has virtually zero emissions," Mr. Kurosaki explains. "The most challenging for us are the noise regulations. There is a residential district right next to our mill. We are not allowed to make more than 45 decibels of noise during night-time. For comparison, this is equivalent to the noise of a Toyota Prius hybrid car at idle."

Due to the modern facility and practically zero emissions, the mill looks and operates like a modern office building. In addition, trees have been planted to maintain the aesthetic beauty of the area, where Mount Fuji dominates in the background with its snow-capped peak.

OPEN FOR EMERGENCY RELIEF

The Pacific Ocean is only four kilometers away from the



The two identical PrimeLineCOMPACT machines are designed for a speed of 1,800 m/min and for a paper width of 2.8 m.

mill gate. Since Japan is vulnerable to earthquakes and tsunamis, the mill is purpose-built to sustain such forces. Multiple steel stairwells provide access to the terrace surrounding the offices upstairs. "The evacuation space is 28 m above sea level and is easily accessed," Mr. Kurosaki says.

Corelex Shin-Ei signed a disaster management agreement with other entities, including the city of Fuji so that the mill can serve as a refuge shelter for local residents if something happens. The offices can be quickly transformed into a civilian crisis center with sustainable reserves of food and water.

YANKEE – THE HEART OF A TISSUE MACHINE

"Before making the decision about the tissue machines, we visited several suppliers," says Takemi Tanaka, General Plant Manager. "We got a good reference for the ANDRITZ Steel Yankee delivered to Corelex Doh-Ei Paper, one of our group's companies, in 2012."

Doh-Ei Paper replaced a cast iron Yankee with an ANDRITZ Steel Yankee in order to get higher drying capacity and energy savings. According to Toshio Okunishi, Group Manager for ANDRITZ in Japan, the performance of an ANDRITZ PrimeDry Steel Yankee is better than the performance of a cast iron Yankee of the same size. "Steel Yankees have an evaporation rate 10-15% higher than cast iron, which results in 8-10% better throughput," Mr. Okunishi says. "Steel Yankees are considered safer than cast iron due to the elasticity of the steel. We use state-of-the-art manufacturing methods to ensure safety and quality."

(l-r) Toshio Okunishi of ANDRITZ and Takemi Tanaka of Corelex.

COMPACT SOLUTION

"During the tender phase for the new tissue machines, we had a lot of constructive discussions with ANDRITZ engineers, and they proposed various possibilities to improve our production efficiency," Mr. Kurosaki says. "We consider ANDRITZ to be a reliable supplier."

ANDRITZ supplied two identical PrimeLine COMPACT tissue machines with Steel Yankees. For the new recycled fiberline, ANDRITZ also delivered two Speed Washer units and a CompaDis disperser.

The 2.8 m trim ANDRITZ machines have maximum design speeds of 1,800 m/min. They are equipped with PrimeDry Steel Yankees with 15 ft (4.57 m) diameters. The machines produce high-quality tissue from recycled fiber for the production of core and coreless toilet paper rolls and facial tissue paper. The coreless tissue roll is a unique patent developed by Shin-Ei Paper.

According to Mr. Okunishi of ANDRITZ, the PrimeLineCOMPACT machine design is ideal for customers who appreciate a standardized, modular

Parent rolls of tissue.

approach. “The idea behind COMPACT is to combine cost efficiency with proven quality,” he says. “The key to its cost efficiency is the level of standardization, which reduces engineering hours, manufacturing hours, installation time, and even transport costs. COMPACT ensures a certain production quantity and high quality in a streamlined, cost-effective package.”

The highlights of the twin PrimeLineCOMPACT machines at Shin-Ei Paper are the fully automated raw material handling and the Steel Yankees with head insulation to conserve energy. For each machine, a single layer headbox feeds stock to a PrimeForm CrescentFormer that has a very high dewatering capacity. White water flow from the former is controlled by special guide vanes so that the energy of the water jet is broken outside the machine. This improves the web section’s housekeeping.

The press section consists of a single suction press to dewater while maintaining high product quality. Beginning at the creping doctors, the sheet run is equipped with threading and sheet support equipment.

Head insulation around the Steel Yankee conserves thermal energy during the production process. Potential steam savings is in the range of 2-5%. In addition to energy savings, the insulation produces less contamination due to its even surface.

> “Robust. Efficient. Environmentally friendly. Easy-to-use.”
>
> Satoshi Kurosaki

A NEW KIND OF “CONVERTING”

The raw material for the greenfield mill comes from areas within 150 km from Fuji (e.g., Tokyo, Nagoya, and Niigata). “Of course we prioritize neighbouring areas when collecting waste paper,” Mr. Kurosaki explains. “These are mainly collected by third-party companies, but we pick up papers containing potentially sensitive information ourselves from

Tissue on the reel – TM1 produces heavy weight toilet tissue; TM2 produces lighter weight toilet tissue and facial tissue.

local governments, because we have the clearance to do this work. Technically speaking, we are converting discarded government documents into disposable tissue!"

Every project has challenges. "There were some delays during erection, but I appreciated ANDRITZ's effort to resolve the issues thoroughly," Mr. Tanaka says. "We put our heads together and arrived at the right solutions, and worked cooperatively through the issues."

"Every problem is an improvement opportunity," Mr. Kurosaki says. "Sometimes we feel that European suppliers could be more flexible with some details. Their approach – which is maybe a cultural difference – might be a reflection of the confidence they have in their excellent technologies."

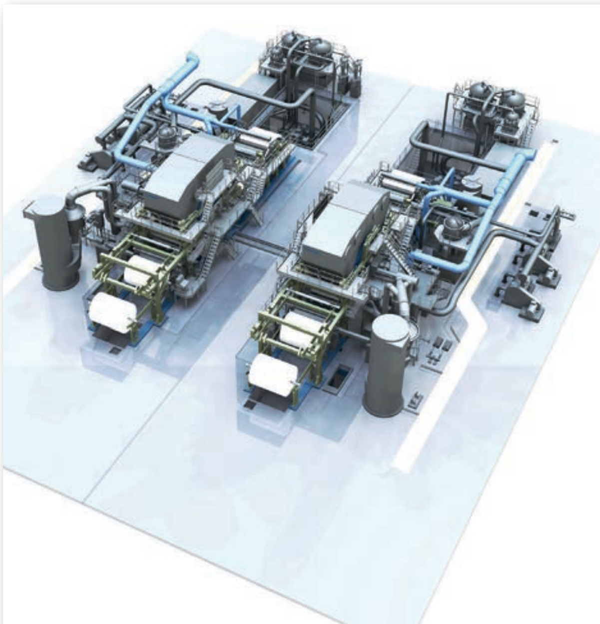
THE NEED FOR SPEED IN JAPAN

With the new mill taken into use, several old tissue machines were shut down and their production has been integrated into the two high-performance tissue machines. The start-up of the twin ANDRITZ machines took place in spring 2015. Since then, the machines have reached speeds up to 1,900 m/min (1,800 m/min design) on 100% recycled fiber. "We can be proud of this, the fastest in Japan," Mr. Kurosaki says. "The machine in San-Ei's Kawasaki mill runs up to 1,600 m/min, and machines producing toilet tissue with virgin pulp in Japan are also running at 1,600 m/min."

The grade mix for the two machines is split such that TM1 produces heavier weight toilet tissue, while TM2 produces lighter weight toilet and facial tissue products. "In addition to the speed, we are producing high-quality products from lower quality raw materials," says Mr. Tanaka. "With ANDRITZ tissue machines, we are running at the highest speed level in Japan even utilizing recovered fiber. It is amazing. I say with pride that we are the most vibrant company of our size, and we will keep developing."

Mr. Tanaka has a very high opinion of the user-friendliness of the PrimeLineCOMPACT machines. "The functionality of the automation systems is excellent," he says. "Everything is digitized and PLC controlled. The line is very easy to operate even for new or inexperienced employees. We have only three operators per shift, thanks to the advanced ANDRITZ automation." ■

Satoshi Kurosaki, President of Corelex Shin-Ei



PrimeLineCOMPACT twins. Identical tissue machines with 2.8 m width

Advanced Packaging Technology

Made in Germany by SENNING

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

Today, SENNING is a medium-sized mechanical engineering company with more than 90 employees in its headquarters in Bremen, Germany. The family business is managed in third generation. More than 85% of SENNING machines are exported worldwide.

SENNING implements customer-individual wrapping machines for napkins, facials, hand towels and non-woven products as well as complete production lines for handkerchiefs with highest precision, individual format sizes and a variable performance range.

The current SENNING portfolio includes state-of-the-art machinery, equipped with the latest generation of selected components from first-class suppliers, like Siemens, Schneider, etc.. SENNING continuously develops its machinery for the benefit of its customers. The technical creativity of SENNING-engineers as well as a great deal of feeling for the products wrapped by SENNING machines is the trademark of SENNING.

HIGH-PERFORMANCE HANDKERCHIEF LINES FROM A SINGLE SOURCE

Currently, SENNING presents the new generation of fully-automatic handkerchief lines Made in Germany. The latest development by SENNING – the Handkerchief line, consisting of Production Machine

S.PM 820, Labeller DPS 4.2 or Taping Machine SGT 2.1 and Bundling Machine 660 TG, provides handkerchiefs at a high performance level and with the highest flexibility as well. SENNING guarantees the handling of tissue with 2 to 4 plies. The line produces single packs with 5 to 15 tissues per pack – standard and/or compact – as well as bundles starting from 2 up to 96 single packs, with up to 6 layers.

The guaranteed maximum production speed of the line is 8.000 tissues, 850 single packs and 100 bundles per minute. In case a smaller output is sufficient, the Handkerchief Line S.PM 805 with integrated labeller or taping unit and the Bundling Machines 662 TG or 660 TG-70, with a maximum guaranteed production speed of 4.000 tissues, 450 single packs and 75 handkerchief bundles per minute is available.

Both lines provide optimum access and are very user-friendly. The operating panel is equipped with non-verbal pictograms which are intuitively understandable. Only one operator is necessary for the whole line.

Another interesting function is the change of counts per single pack by push button, without any further mechanical adjustments and without any exchange of parts. Moreover, the tissue stacks are conveyed by pushers in a controlled way, so that the stacks are not compressed during transportation through the line and thus, the stack volume remains unchanged. The complete line is operated by an integrative electrical system. Apart from that, the low need of wear parts is worth mentioning.

For each machine, a variety of options is available, such as special perforations of film, appliance of lotion, perfume units, double embossing station, different embossing systems, labelling or taping for reclosable packs and for handkerchief bundles, auto splicing units for film and tissue, and many more.

Together with its customers, SENNING develops specific solutions for all requirements concerning machinery, technical applications or product wrapping. In 2017, another high-performance Handkerchief Line S.PM 805 + 662 TG has been commissioned at one of their German customers, a well-known producer of tissue products. SENNING implemented special technical solutions, tailored to the customer's requirements of machine handling and production. ■