

# TWM

TISSUE WORLD MAGAZINE

The independent news  
provider for the global  
tissue business



## MILLENNIALS BREAKING THROUGH

ONE OF THE LARGEST  
POWER-SPENDING  
GENERATIONS IN  
HISTORY IS POISED TO  
DEFINE ECONOMIES  
FOR YEARS AHEAD



Plus ...

### Country Report: Canada

Rebrand and M&A: Cascades Tissue Group

### Technical Theme: Converting

High-level technology moves into  
global market

### Distribution Special Report

70% of consumers will buy consumer  
packaged goods online in five to seven years



### MarketIssues

China slows down – as bankruptcy fears  
increase

### ExitIssues

ASEAN the global demand leader – can this  
be the Asian Century?

### ConsumerSpeak

Geometry, math, Cartesian space... and tissue

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### ▲ Rebrand and M&A:

TWM interviews Cascades Tissue Group president and COO Jean-David Tardif for our Canada Country Report

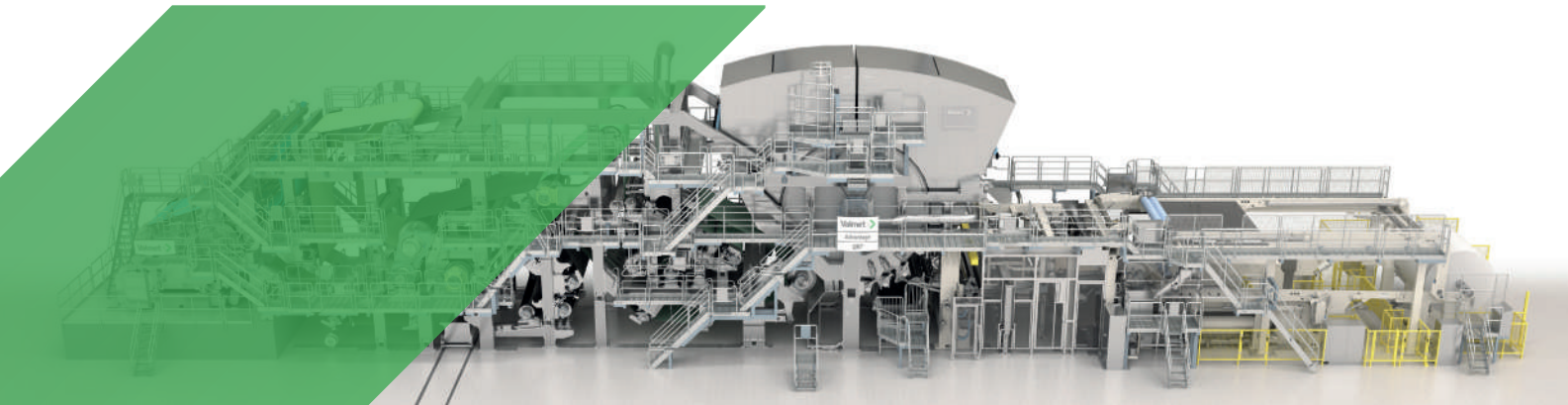
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Cover: Generation app - with Millennials soon to become one of the largest-ever power-spending generations, the tissue market is poised to respond. Image by Contrast Creative, Manchester, UK



# Moving forward in tissue with high flexibility



To go forward and keep ahead of the game in the demanding world of tissue production you have to be able to move fast. Flexibility is now a necessity as switching grades and qualities has become the new reality in tissue production. Utilizing hybrid technology, Valmet's new range of Advantage NTT, QRT and eTAD tissue machines now have flexibility built in at their very heart and will allow you to swing between plain, textured and structured tissue products.

As well as unique flexibility, the Advantage NTT, QRT and eTAD range also gives excellent softness and high bulk using less energy and fiber per roll. Valmet Hybrids - for maximum flexibility in tissue making. Read more at [valmet.com/hybrid](https://valmet.com/hybrid)







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## THE SHAPE OF THE ECONOMIES OF THE FUTURE BELONGS TO MILLENNIALS AND GENERATION Z

Helen Morris

Senior Editor, Tissue World Magazine

**A**ny industry today has to know what Millennials and Generation Z consumers want. This new generation of shoppers is the smartest ever... the first generation of digital natives.

Close to 60% of them use their ease with technology to compare prices in store. They want to swipe and compare as they go along. They want low carbon emissions, non-GMO, e-commerce, home delivery, instant access price comparisons, product information, peer reviews, wellness, hygiene that's fashionable and stylish ... they want it all, and they have the spending power to get it.

Millennials – born 1981 to 1996 and numbering 92m in the US – and Generation Z – born 1990+ and numbering 61m – comprise one of the largest generations in history and is about to move into its prime spending years. This power bloc of shoppers will shape the economies of the future. Their unique experiences will change the ways we buy and sell, forcing companies to examine how they do business for decades to come.

The good news is that they like tissue. They like quality and innovation, and target green and stylish products. The Center of Sustainable Business found that when items such as all natural, non-GMO, plant-based, or Fair Trade were marketed as sustainable, sales rose 5.6 times faster than conventionally-marketed products.

Tissue is already ahead of the curve in listening and responding, as is consistently made clear across all sectors in TWM. As one executive at a leading company put it ... they had to learn to "innovate how to innovate," and are now, in just one example, inviting these consumers in to the product development process.

### Advanced technology advances again

Leading converters love to talk about their latest piece of wizardry, and it's easy to see why with the innovation on display in our Technical Theme. Three points caught my eye, admittedly more from a journalistic rather than a technical stand-point, from the array of developments.

Giovacchino Giurlani, chief technology officer, Futura, talks of vision cameras which themselves interpret images from the line and instigate action, meaning the line can react and adjust automatically in response to issues with the tissue web or winding.

Enrico Zino, global head of marketing, Fabio Perini, says continuous improvements will lead in the near future to a learning machine.

And Martin Kyles, president/chief executive, Maflex America, provides a peak performance numeric for the modern age ... 24-7-365.

### How long will the rapid expansion of the Chinese tissue business continue?

MarketIssues is a performance report on China at this stage of the trade war which may, or may not, be over. The economy has slowed and prices across the board are rising.

At the time of writing the coronavirus outbreak is a growing health and business concern with factory closures and supply lines disrupted in a crucial manufacturing region for the whole world. Whatever develops, it will further impact the country's economic performance to a lesser or greater degree.

Prior to this developing crisis, official figures show that the world's second largest economy expanded by 6.1% in 2019 from the year before - the worst figure in 29 years.

Urbanisation has meant tissue is now part of normal daily life in the vast majority of households. But trade wars and price rises have substantially slowed retail business even as capacity seriously outgrows organic demand and surging investment seems unchecked.

Leading companies seem unwilling to resist positioning themselves to seize the advantage come the upturn. The result? Investments are likely to slow, with more bankruptcies of tissue mills and companies, and several will exit the business. The competition is keen and only the best performers will survive.

# HOW LONG WILL THE RAPID EXPANSION OF THE CHINESE TISSUE BUSINESS CONTINUE?

Today tissue products are part of normal daily life in the vast majority of Chinese households. But major developments are having profound consequences — the trade war, price increases, and the early stage of the coronavirus outbreak in a crucial manufacturing region for the whole world. Esko Uutela, principal, tissue, Fastmarkets RISI, looks at the economy pre-coronavirus.

MI



**Esko Uutela**  
Principal, tissue, Fastmarket RISI

For the past 20 years, China has been the main driving force of global tissue growth. In 2008-2018, more than 40% of the volume growth in global tissue consumption took place in China and the country showed very strong growth rates, which in some years even exceeded 10%.

The average relative growth rate in 2008-2018 was 8.0% per year, up slightly from the

7.6% per year average recorded in 1998-2008. An essential change in the growth is that 20 years ago the geographic focus of expansion was the eastern coastal strip and the Beijing metropolitan area, but more recently the fastest expansion has taken place in the Chinese hinterland, including both central China and parts of northern China; tissue products have had a lot of untapped consumption potential in both regions.

Urbanisation has been a major driver for tissue consumption for a very simple reason: when you move from rural living conditions to urban areas, you need to change your hygienic habits as well. Today, tissue products are part of normal daily life in the vast majority of Chinese households and the AfH tissue business has also started to develop rapidly.

The rapid expansion of the Chinese tissue market is closely related to the overall improvement in the welfare of the population, and the past strong economic growth substantially contributed to the steady and robust growth in tissue consumption. But recently, the Chinese

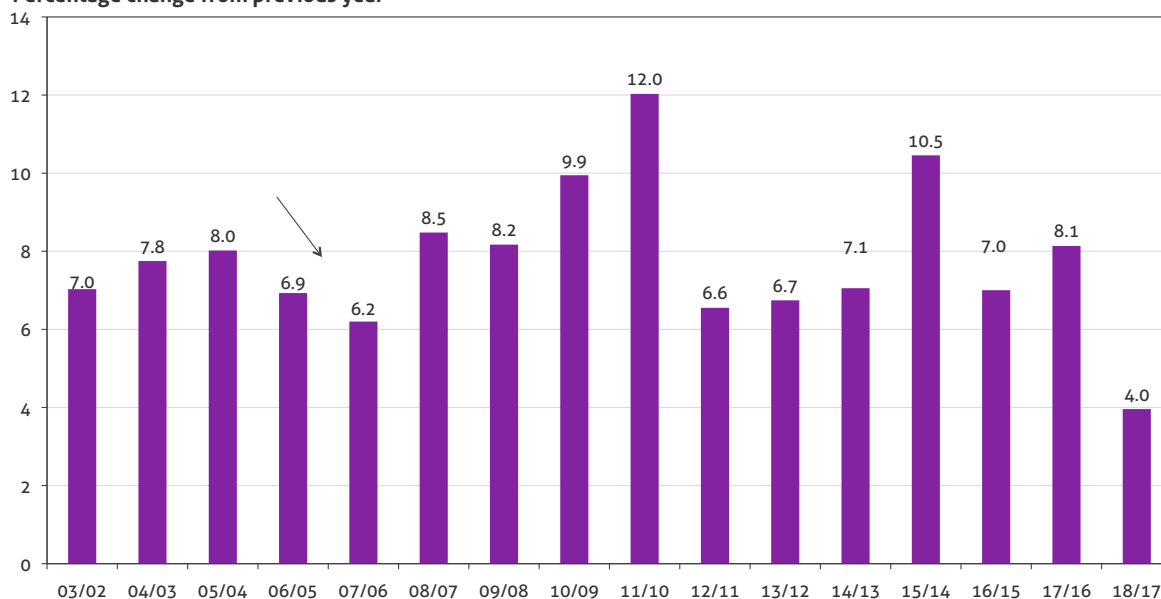
economy has shown signs of weakening for several reasons, of which the trade war with the USA is certainly one of the most important.

In China, the escalation in prices of daily necessities has also negatively affected the attitudes of consumers, and growth in the retail business has slowed substantially.

These developments have also influenced sales of tissue products. It was a major surprise to me and certainly also for many industry spectators when the China National Household Paper Industry Association (CNHPA) published its figures for 2018 last spring. In particular, tissue parent roll production was clearly lower than anticipated and domestic sales were also below all expectations.

Based on the apparent consumption calculation method we use for tissue consumption (production plus imports minus exports), growth in Chinese tissue consumption in 2018 was no more than 4.0%, only half of the 8.0% growth recorded in 2017.

**Figure 1**  
Recent growth rates of Chinese tissue consumption  
Percentage change from previous year



However, the weakness of apparent consumption is that it does not take into account any stock changes, so it is possible that because a lot of tissue capacity came on stream in 2017 (peak year), and because market pulp prices were so high, that companies reduced their production of parent rolls and used their parent roll stocks for converting instead.

Even so, this would explain at most only one percentage point of actual consumption growth. So, the Chinese tissue business definitely slowed in 2018, a fact which all the indicators in the 2018 CNHPA annual report confirm.

However, on the supply side, there are almost no signs that investment activity is calming down. The number of new investment projects has exploded in recent years; 2017 was the most recent peak year with more than 2 million tonnes of new tissue capacity starting up.

In 2018-2020, our project list shows about 1.9 million tonnes of new PMs each year. Some PMs have already been ordered for 2021 and 2022 and more will certainly be announced later on.

This means that in 2015-2022, the known or announced projects will add about 11 million tonnes of new tissue capacity, of which more than 8 million tonnes has already been started up. The Chinese tissue industry is experiencing major restructuring, with new, modern PMs being constructed and older capacity closed.

Tissue PM closures also peaked in 2017, when about 1.3 million tonnes of old PMs were closed. In 2015-2019, about 3 million

tonnes of tissue capacity was idled and dismantled. Some of the closures were caused by mandatory shutdowns because of environmental reasons and high energy needs; for example, in Baoding, Hebei, the main hub of the Chinese tissue industry, coal-burning boilers were forbidden and tissue mills were required to invest in gas-burning boilers and, where applicable, gas-fired hoods and new machines. This was a major impetus behind the investment wave in 2017. But as the Chinese tissue market is extremely competitive, closures have also occurred for financial reasons, such as the recent closure of the large Ningxia Zijinghua mill and the bankruptcy of the Shandong Tranlin group, both of which used straw pulp as their main raw material.

But will these heavy investments, which clearly exceed the organic market growth, continue? Tissue exports have expanded and have eased the overcapacity situation in China somewhat, but now the trade war (at the time of writing) with the USA will likely result in no export growth in 2019.

The organic growth of the Chinese tissue market cannot absorb all the new capacity and average tissue capacity utilisation will continue to fall. The CNHPA reported capacity utilisation of 73% in 2018, which is reasonable if not accounting for learning curves for new PMs.

One item of note about the industry expansion is that more and more Chinese companies, including the large players, have begun to conduct trials with smaller PMs made by domestic tissue PM manufacturers instead of large world-class machines imported from Europe.

Additionally, the number of Chinese tissue PM suppliers has grown and new entrants are gaining ground in the market. There is a major difference in tissue PM prices between domestic and imported PMs, which has certainly been a major factor for selecting the supplier.

A second fact is that the average quality of Chinese tissue PMs has rapidly improved and their capacity has risen above 20,000 tonnes to as much as 30,000 tonnes per year. Our project list for the coming years does not show any small PMs with capacity below 10,000 tonnes per year at all, and also no narrow PMs (trim below 2m).

However, the competitive situation is likely to slow down investments, which will become riskier in China in the next few years. The bare truth is that serious overcapacity in the tissue market is prevailing in China and there seems to be no end for this development.

It is very likely that there will be more bankruptcies of tissue mills and companies and several will exit the business. The competition is keen and only the best performers will be winners in this game.

*Esko Uutela, principal, tissue, is the author of Fastmarket RISI's Outlook for World Tissue Business study, the World Tissue Business Monitor and the US Tissue Monthly Data. He works out of Fastmarkets RISI's EU Consulting office near Munich, Germany, and can be reached at: Tel: +49.8151.29193 or Email: euutela@fastmarkets.com. To learn more about the global tissue market, visit [www.risi.com/tissue](http://www.risi.com/tissue).*

**THE RAPID EXPANSION OF THE CHINESE TISSUE MARKET IS CLOSELY RELATED TO THE OVERALL IMPROVEMENT IN THE WELFARE OF THE POPULATION, AND THE PAST STRONG ECONOMIC GROWTH SUBSTANTIALLY CONTRIBUTED TO THE STEADY AND ROBUST GROWTH IN TISSUE CONSUMPTION. BUT RECENTLY, THE CHINESE ECONOMY HAS SHOWN SIGNS OF WEAKENING FOR SEVERAL REASONS.**

**Figure 2**  
Summary of new tissue capacity start-ups in China based on known projects, 2015-2022  
Thousand tonnes





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SHELF-READY  
PACK**



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**“ESPECIALLY IN THE TISSUE RANGE, TOSCOTEC IS A HIGHLY REGARDED AND ESTABLISHED COMPANY THAT STRENGTHENS OUR OFFERING IN THIS IMPORTANT GROWTH AREA. WITH THIS ACQUISITION, VOITH CAN EXPAND ITS POSITION AS A FULL-LINE SUPPLIER IN ALL AREAS OF THE PAPER INDUSTRY.”**

Andreas Endters

## GLOBAL

### **Toscotec acquired by Voith Group; Toscotec to continue to provide its products and operate at existing locations**

Italian tissue machine manufacturer Toscotec has signed an agreement for 90% of its shares to be acquired by Voith Group. Alessandro Mennucci, chief executive of Toscotec, will retain a 10% ownership. The agreement was signed on 20 December 2019.

Established in 1948, the company is headquartered in Lucca, Italy, and also has subsidiaries in China and the USA.

Following the acquisition, Toscotec will continue to provide its range of products and services and to operate at its existing locations.

The Voith Group was founded in 1867 and is a global technology company with sales of €4.3bn and locations in over 60 countries worldwide.

Voith Paper president and chief executive of the Group Division Andreas Endters said: “Especially in the tissue range, Toscotec is a highly regarded and established company that strengthens our offering in this important growth area.

“With this acquisition, Voith can expand its position as a full-line supplier in all areas of the paper industry and gains a tradition-rich, powerful, and agile unit.”

Mennucci said: “We look forward to starting this new exciting phase of our history.

“We will strengthen our entire organisation with substantial synergies. Toscotec’s winning team will remain the same and will have the opportunity to grow and achieve new and important targets.

“The focus of our efforts is on maximum production efficiency, reduced consumption, and the highest quality.

“We are happy to have gained a renowned partner with Voith that pursues sustainable business activities and a likewise sustainable investment strategy.”

The acquisition is expected to be completed in the first half of 2020, subject to all regulatory approvals and to the meeting of closing conditions.

**“WE WILL STRENGTHEN OUR ENTIRE ORGANISATION WITH SUBSTANTIAL SYNERGIES. TOSCOTEC’S WINNING TEAM WILL REMAIN THE SAME AND WILL HAVE THE OPPORTUNITY TO GROW AND ACHIEVE NEW AND IMPORTANT TARGETS. THE FOCUS OF OUR EFFORTS IS ON MAXIMUM PRODUCTION EFFICIENCY, REDUCED CONSUMPTION, AND THE HIGHEST QUALITY.”**



## Valmet and Fabio Perini team up in Industrial Internet ecosystem partnership

Valmet and Fabio Perini have established an Industrial Internet ecosystem partnership to provide digital solutions for tissue production and converting. The aim is to allow tissue producers and converters to work together more efficiently, and to exchange knowledge and resources for the benefit of their customers. The partnership combines Valmet's tissue making technology and process optimisation know-how with Fabio Perini's expertise in complete solutions for converting and packaging machines as well as in the converting process and technology.

The collaboration aims at providing an unbroken chain of production data from the tissue machine to the converting line and using artificial intelligence-driven applications in the tissue production process to make the converting operations downstream more efficient.

Jari Almi, vice president, Industrial Internet, Valmet, said: "Starting from customer needs, Valmet and Fabio Perini are now taking the first steps to develop solutions where innovation goes beyond company borders, covering both tissue production and converting processes.

"Through collaboration with our common customers we can provide new digital solutions and services to help move tissue mills' performance forward."

Oswaldo Cruz Junior, chief executive of Körber's Business Area Tissue, added: "We believe an open innovation model is a key concept through which companies within tissue business can create different partnerships to make their innovation process more efficient, as well as exchange knowledge and resources. By combining the strengths of our companies, we can facilitate broad innovation and fast adaptation, enable new business and service models and help improve the profitability of companies in the tissue business."

**VALMET AND FABIO PERINI HAVE ESTABLISHED AN INDUSTRIAL INTERNET ECOSYSTEM PARTNERSHIP TO PROVIDE DIGITAL SOLUTIONS FOR TISSUE PRODUCTION AND CONVERTING. THE AIM IS TO ALLOW TISSUE PRODUCERS AND CONVERTERS TO WORK TOGETHER MORE EFFICIENTLY, AND TO EXCHANGE KNOWLEDGE AND RESOURCES FOR THE BENEFIT OF THEIR CUSTOMERS. THE PARTNERSHIP COMBINES VALMET'S TISSUE MAKING TECHNOLOGY AND PROCESS OPTIMISATION KNOW-HOW WITH FABIO PERINI'S EXPERTISE IN COMPLETE SOLUTIONS FOR CONVERTING AND PACKAGING MACHINES.**

## Kimberly-Clark announces year-end 2019 results and 2020 outlook

Kimberly-Clark (K-C) has used its latest results to emphasise its plan to deliver top- and bottom-line growth in 2020.

It reported fourth quarter 2019 net sales of \$4.6bn, while full-year 2019 net sales were \$18.5bn, both even with the year-ago period.

Net sales in 2020 are expected to increase 1% year-on-year.

Mike Hsu, chairman and chief executive, said: "Our fourth quarter results capped off a year of excellent progress at Kimberly-Clark.

"For the full year of 2019, we delivered 4% growth in organic sales and in adjusted earnings per share, both ahead of our original outlook for the year.

"We also achieved strong margin improvements, generated \$425m of cost savings and returned \$2.2bn to shareholders through dividends and share repurchases.

"At the same time, we launched innovations, pursued our growth priorities and increased our investments behind our brands and in capabilities to position us for longer-term success."

He added that in 2020, the plan is to deliver top- and bottom-line growth whilst increasing its growth investments.

"We remain very optimistic about our opportunities to deliver balanced and sustainable growth and create long-term shareholder value," he said.

The company's fourth quarter 2019 operating results were impacted by changes in foreign currency exchange rates which reduced sales by 2% and business exits in conjunction with the 2018 Global Restructuring Programme which reduced sales slightly.

In North America, organic sales increased 3% in both consumer products and in K-C Professional.



*"Looking ahead, our plan for 2020 is to deliver top- and bottom-line growth consistent with our medium-term financial objectives while continuing to increase our growth investments and allocate capital in shareholder-friendly ways." K-C chief executive Michael Hsu*

Outside North America, organic sales rose 3% in developing and emerging markets and 1% in developed markets.

Fourth quarter operating profit was \$751m in 2019 and \$639m in 2018.

In the personal care segment, fourth quarter sales of \$2.2bn increased 1%. Net selling prices increased 2% and product mix improved approximately 2%.

Fourth quarter operating profit for the segment was \$445m, an increase of 2%. Sales in North America increased 2%.

In the consumer tissue segment, fourth quarter sales were \$1.5bn, an increase of 1%. Net selling prices increased 3%, while volumes declined 1% and changes in currency rates reduced sales 1%.

Fourth quarter operating profit of \$281m, an increase of 36%.

The company said the results benefited from higher net selling prices, cost savings and lower input costs.

The comparison was impacted by other manufacturing cost increases and increased selling, general and administrative costs.

Sales for the sector in North America increased 4% and net selling prices rose 6%, while volumes fell 3%.

Sales in developing and emerging markets decreased %, including a 2 point negative impact from changes in currency rates.

Net selling prices improved 1%, while volumes fell 1%.

Sales in developed markets outside North America decreased 2% and changes in currency rates reduced sales 4%, while volumes improved 2%.

## OMET launches ASV Storm Line

OMET has targeted the interfolded towel and facial tissue sector with its latest launch, the ASV Storm Line.

The line has a new automatic interfolding head that combines extensive modularity, ease of use and high productivity for the production of 1,2 or 3-ply paper hand towels, 2,3 or 4-ply facial tissue and 2-3-ply toilet paper.

This line is the result of a careful technological research with innovative and patented operating principles, that allows a complete modularity with in-line, mirror or 90 degrees configurations.

It can be designed and configured in a flexible way according to the needs of the user with the addition of several functional modules: unwinders, lamination units, embossing units, calenders, lotion application systems and wheel knurling units, banding units, log and gang saw, as well as the automatic interfolding head and the longitudinal slitting units that form the

**OMET HAS TARGETED THE INTERFOLDED TOWEL AND FACIAL TISSUE SECTOR WITH ITS LATEST LAUNCH, THE ASV STORM LINE. THE LINE HAS A NEW AUTOMATIC INTERFOLDING HEAD THAT COMBINES EXTENSIVE MODULARITY, EASE OF USE AND HIGH PRODUCTIVITY FOR THE PRODUCTION OF 1,2 OR 3-PLY PAPER HAND TOWELS, 2,3 OR 4-PLY FACIAL TISSUE AND 2-3-PLY TOILET PAPER.**

core of the machine

OMET offers two versions of the ASV Line, the Tornado and the Storm Line, distinguished by their different folding units and a wide range of finishing units, in order to specifically fulfil different production needs.

### Essity reports 8.8% net sales increase

Essity has said price increases, improved product mix and higher volumes have resulted in growth and profitability in its year-end report.

Between 1 January – 31 December 2019, net sales increased 8.8% to SEK128,975m, compared with SEK118,500m from the same period a year ago.

Emerging markets accounted for 37% of net sales and saw an increase in organic net sales of 9.1%.

EBITA increased 31% to SEK 15,127m while profit for the period increased 19% to SEK10,212m.

The company said the implementation of price increases, a better product mix, higher volumes, cost savings and lower raw



*Automatic interfolding: OMET officially launches its ASV Storm Line*



# AIRMILL, A VERY PROFITABLE EMBOSSING TECHNOLOGY

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Since it has been presented to the market, AirMill confirmed all the promises made by Gambini Spa. As a matter of fact, AirMill was chosen and bought by many customers who can now testify the efficiency and the flexibility that AirMill can add to the production process both in the papermill and in the converting.

AirMill, in fact, allows to produce many types of tissue rolls with remarkable benefits compared to standard products. Some examples: **same paper with up to 56% higher thickness; same paper with up to 25% higher diameter; same diameter with up to 23% less fibers**. These unthinkable results allow to reach profitable and sustainable advantages also in the papermill, where the production can be optimized without compromising on the quality performances of the final products.

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material costs positively impacted earnings.

However, stock revaluations due to lower raw material prices and higher distribution costs had a negative impact on earnings.

During the year, the company said it "increased growth, improved profitability and strengthened our competitiveness for the future".

This was done through innovations and investments in sales and marketing that it said strengthened its market positions and brands.

The company's online sales also increased to SEK13bn, corresponding to 10% of net sales.

Price increases and an improved product were also noted in all business areas.

The group-wide cost-savings programme was concluded at the end of 2019.

Activities to improve underperforming market positions continued and resulted in improved profitability in several markets.

In Latin America, the company strengthened its market positions and organic net sales increased 10%.

The company's China-based subsidiary Vinda strengthened its position as market leader in tissue and launched Feminine Care with the Libresse brand.

In Asia, organic net sales rose 11%.

Additional sustainability targets for packaging were also established, with a particular focus on plastic packaging.

The company also invested in sustainable technology for alternative fibre for tissue production.

In consumer tissue, the company reported net sales of 10.6% to SEK49,904m for the January-December period.

Emerging markets accounted for 47% of net sales.

Adjusted EBITDA increased 60% to SEK5,321m.

This increase was mainly due to higher prices, a better mix, higher volumes, lower raw materials and energy costs, and cost saving.

In the consumer tissue business, the company has finalised some negotiations and agreed on price decreases in Europe.

The company added that the decreases are on "average low single-digits" and will have an impact in the first quarter of 2020.

## Sofidel achieves record environmental score in WWF report

Sofidel has continued to boost its environmental efforts after achieving a 77.2% overall score in WWF's Environmental Paper Company Index (EPCI) 2019, up from its 76.6% result in 2017's

## GERMAN TISSUE MANUFACTURER WEPA HAS INVESTED IN A TOTAL OF SEVEN TOSCOTEC-SUPPLIED CUSTOM-MADE HOOD AND AIR SYSTEM REBUILDS ON A TURNKEY BASIS. TOSCOTEC HAS SUPPLIED THE COMPLETE PACKAGE FOR THE REBUILD, FROM ITS ENGINEERING DESIGN, TO THE COMPONENTS SUPPLY, DOWN TO ONSITE DISMANTLING OPERATIONS, ERECTION, COMMISSIONING AND START-UP.

survey.

The Italian tissue giant's result was also ahead of the 67% recorded by the overall global tissue category.

Sofidel has further improved in two out of three sub-categories – Responsible Fibre Sourcing and Reporting & EMS (Environmental Management System).

Launched in 2013, the EPCI report is a biennial tool proposed by the environmental organisation to companies in the pulp and paper industry to assess their environmental commitment and transparency.

It is based on voluntary data disclosure on 50 indicator questions WWF considers important for tracking a company's ecological footprint over time.

On a scale from 0 – 100, Sofidel has achieved a score of:

75% for Responsible Fibre Sourcing (compared to 72% in 2017), related to raw material (pulp) sustainable procurement;

80% for the Reporting & EMS section (79% in 2017), with regards to social and environmental reporting;

77% in the Clean Manufacturing category (79% in 2017), which takes into consideration the reduced environmental impact of production processes. The company said the decrease was mainly due to the lower environmental efficiency of its plants following the standard implementation of new production capacity in Spain, Poland and the United States.

The company has participated in all the four editions of the WWF biennial report, with an overall score progress of 12.4 points. Since 2015, it has provided data for the compilation of the report with reference to 100% of its production. This year, 30 out of 84 invited companies took part in the Index. In addition to increased overall scores assessed in the WWF Index, Sofidel said it is committed to reducing direct emissions of CO2 into the atmosphere (reduction in carbon intensity).

In order to achieve this goal, the company invested in ten years (2009 – 2018) around €100m – of which €27.5m in

Italian plants – in cogeneration plants and energy production from renewable sources (photovoltaic and hydroelectric), biomass power plants and energy efficiency.

Another fundamental area of action is the sourcing of pulp certified by independent third parties with forest certification schemes (FSC, FSC Controlled Wood, etc.) which has reached a level of 100%.

The company also works to safeguard water resources, limiting its consumption within the production processes.

## WEPA boosts capacity with rebuilds; Leuna mill investment latest

German tissue manufacturer WEPA has invested in a total of seven Toscotec-supplied custom-made hood and air system rebuilds on a turnkey basis.

Toscotec has supplied the complete package for the rebuild, from its engineering design, to the components supply, down to onsite dismantling operations, erection, commissioning and start-up.

For these rebuilds, the machinery supplier developed a custom-made design of its hoods aimed to increase production and reduce energy consumption to a minimum; it engineered the nozzle boxes and customised the air system according to WEPA's requirements, in order to achieve top operation flexibility in cross direction moisture control and better machine runnability.

Toscotec supplied other hood and air systems to WEPA in Germany, France and Poland as part of the supply of new tissue lines.

The following three projects are a selection of the rebuilds carried out from 2006 to 2019.

Most recently included the rebuild of PM10's hood at Germany-based WEPA Leuna's in 2019.

Lars-Helge Peters, WEPA Leuna mill manager, said: "Inside the building we had to do a big crane job with evident space restraints, but Toscotec handled it very well.

"During the six months after the rebuild,

we achieved two positive results: the first is a 3-5% reduction of PM10 overall energy consumption (gas and electrical power) and the second is the improvement of the moisture profile across all grades, from kitchen towel to toilet paper.

"Also, on this new configuration, compared with the old hoods, we observed an increased stability of the hood section and better runnability."

The supplier said that the results of seven hood rebuilding projects over 13 years have been the "consistent reduction of gas and power consumption higher than the contract guarantees, and a significant increase in the runnability of the machine, both in terms of overall efficiency and cross direction moisture profile."

### **Voith to be carbon neutral worldwide from 2022; plans to switch to purchasing carbon-neutral electricity and offset unavoidable carbon emissions**

Voith has announced that from 2022 onwards, none of its locations globally will leave a carbon footprint.

With a view to implementing carbon neutrality quickly, the company is going to switch to purchasing carbon-neutral

electricity in the near future as well as offsetting unavoidable carbon emissions with compensation measures.

At present, it already purchases one third of its electricity needs from renewable resources. It will gradually increase the share of renewable energies, both in its own generation and in its purchasing.

Furthermore, Voith is going to invest five million euros each year in energy efficiency, including its locations' own generation.

Toralf Haag, president and chief executive of the Voith Group, said: "As a global technology company, we consider the efficient use of resources and energy at all locations worldwide to be part of our entrepreneurial responsibility.

"By combining economic principles with ecological commitment, we are not only making a contribution to climate protection but are at the same time creating quantifiable added value for our company."

### **Sofidel unveils "reduced-waste" toilet tissue and napkins products**

Sofidel has launched two Papernet-branded products – the small core toilet tissue and Ready Table interfolded napkins – that it said contributes to a site's waste

reduction.

The small core toilet tissue limits waste by allowing more paper to fit in a smaller roll – each roll holds more than eight rolls of conventional toilet paper.

In addition to helping businesses minimise waste, Sofidel said that small core rolls allow for more effective packaging, logistics and storage.

The new Ready Table interfolded napkins are designed for foodservice operations and are made from 100% virgin fibres.

They are folded using a special technique that offers greater absorption to curb paper waste.

Georgia Giove, marketing manager – AfH for Sofidel America, said: "We continue to develop products with an emphasis on sustainable hygiene.

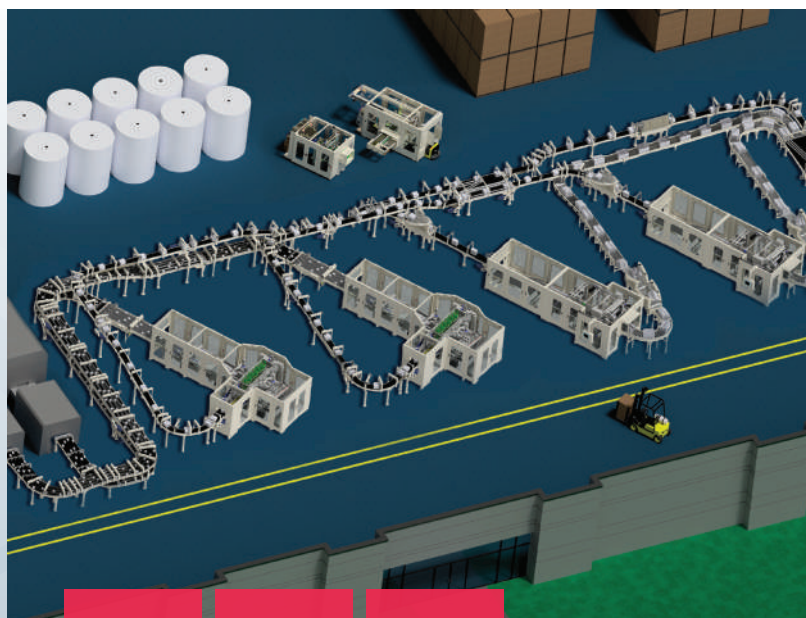
"Small core toilet tissue and Ready Table interfolded napkins empower businesses to reduce their carbon footprints by reducing waste.

"These two new options add to our repertoire of environmentally-friendly products while enabling businesses to stand out as green, clean operations at a time when sustainability is increasingly important to consumers."

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**Ultra-premium quality:** a mock-up of Irving Consumer Products' new TAD machine

## AMERICA

### Irving boosts ultra-premium capacity with TAD investment

Irving Consumer Products invests in second TAD machine following Macon start-up. The machine is planned to start-up in 2022 and will increase the company's production of ultra-premium products to the North American market, adding 75,000tpy to Irving's current production. It is a repeat order of the Advantage ThruAir machine that was started up by the company 2019.

Valmet's scope of delivery will comprise of a complete tissue production line with stock preparation equipment. The new line will include an Advantage ThruAir tissue machine including an OptiFlo II TIS headbox, ThruAir Dryers and Air system and an Advantage SoftReel reel. It also includes mist and dust systems, automation systems, basic mill engineering and advisory services. The value of the new order is not disclosed. Robert K. Irving, president of Irving Consumer Products, said: "The new TAD machine will help Irving Consumer Products continue to grow and deliver ultra-premium quality tissue paper products to our customers."

Previously Valmet has delivered one ThruAir machine to Irving's Macon, Fort Edward, Toronto site, as well as carried out major rebuilds of tissue machines TM1 and TM2 to Saint John. Irving recently announced it is doubling capacity of ultra-premium household paper products at its Macon plant and is immediately initiating an expansion of the plant.

Irving Consumer Products is one of North America's leading manufacturers of household paper and baby diaper products.

Irving Consumer Product companies

include Irving Tissue and Irving Personal Care. Irving Tissue produces premium household store brand paper products for many of North America's top retailers. Irving Personal Care manufactures baby diapers and training pants in Canada.

### Marcal Paper – "back in business"; finalises merger with Nittany Paper

Marcal Paper has returned to regular papermaking operations in New Jersey, in January, less than one year after a 10-alarm fire destroyed its iconic manufacturing facilities and caused the immediate shutdown of the business. President and chief executive Rob Baron, said: "We are thrilled to announce that we will officially be back in business."

"The prospect of such an announcement seemed impossible eleven months ago, when a devastating fire eliminated eighty years of manufacturing history in less than eight hours.

"Thanks to the support we have received from the awesome New Jersey community, and the efforts of our entire team, we will soon return to regular papermaking operations in Elmwood Park.

"We understand that many in our family lost a lot the day the fire struck our mill, and we have done everything possible to try to help them recover. We also understand what Marcal means to Elmwood Park, to Bergen County and to New Jersey as a whole; we were - and now will be again - the one and only recycled tissue manufacturer in the Garden State."

In the days ahead, the company is gathering at the mill to officially restart Marcal, and "launch a new chapter in what is a uniquely New Jersey story".

In the immediate aftermath of the

fire, Marcal coordinated an aggressive programme of assistance for those team members whose jobs were lost that day.

State and local officials and dozens of employers connected associates with new employment opportunities and critical human services, and Marcal provided associates with financial assistance and extended health insurance coverage.

Marcal has also finalised a merger with Nittany Paper, a converting operation in Pennsylvania, to ensure that the paper rolls manufactured in Elmwood Park can be converted into final product for sale. The fire substantially destroyed sixteen acres of property, including twenty-one paper converting lines. By merging with Nittany, Marcal said it has "secured the only viable pathway to restarting operations in Elmwood Park now, and saving its brand, while leaving open future opportunities for growth or redevelopment at its site in New Jersey".

Baron added: "We did not want to just start up some machines and fail. From day one, we wanted to give ourselves a fighting chance to hire back as many people as we could, as fast as we could, while ensuring we had a viable, sustainable roadmap to thrive - in a very challenging market.

"We've all waited 330 days to be able to say that Marcal was 'back in business.' That day has arrived."

TWM visited the impressive Marcal mill for its north-eastern USA Regional Report in May/June 2016. The site's large, lit-up red "Marcal" sign was displayed above the plant, which was established by founder Nicholas Marcalus in 1932.

The company was planning for future investments and growth to further boost the site's paper-making capacity and famous brand.



**KIMBERLY-CLARK (K-C) CORPORATION HAS APPOINTED AARON POWELL, PRESIDENT OF K-C PROFESSIONAL, AS PRESIDENT OF K-C'S ASIA-PACIFIC CONSUMER BUSINESS. POWELL WILL BE RESPONSIBLE FOR THE COMPANY'S LARGEST INTERNATIONAL REGION WITH OPERATIONS IN MORE THAN 30 COUNTRIES, INCLUDING THE ASEAN MEMBER STATES, AUSTRALIA, CHINA, INDIA AND SOUTH KOREA.**

## ASIA

### K-C names Aaron Powell as president of its Asia-Pacific consumer business

Kimberly-Clark (K-C) Corporation has appointed Aaron Powell, president of K-C Professional, as president of K-C's Asia-Pacific consumer business.

Powell will be responsible for the company's largest international region with operations in more than 30 countries, including the ASEAN member states, Australia, China, India and South Korea.

Achal Agarwal, president of K-C's Asia-Pacific consumer business, has been named in the newly created role of chief transformation officer.

He will lead the strategy and roadmap for further building K-C's global organisational capabilities and evolving its work practices to consistently deliver results.

Both Agarwal and Powell will continue to report to Mike Hsu, K-C chairman and chief executive.

The moves are effective as of 1 March and a successor to lead the K-C Professional business will be named in the near future.

Hsu said: "These leadership changes will help further enable achievement of our K-C Strategy 2022 objectives."

## BRAZIL

### Suzano boosts presence with R\$933.4m project; to include a R\$130m tissue paper converting unit

Suzano is to invest R\$933.4m in three projects in Espírito Santo state, including a R\$130m tissue paper converting unit.

The plant's annual capacity will be 30,000tpy of tissue converted to finished products and it will produce two-ply or three-ply toilet paper.

Production for the paper conversion unit will start in the fourth quarter of 2020 and the raw material for this unit will be produced by the Mucuri Unit in the state of Bahia.

The investment also includes retrofit

work in the unit located in Aracruz as well as expansion of Suzano's forest base in the state.

## INDONESIA

### APP boosts capacity after investing in four new tissue lines

Asia Pulp & Paper (APP) has invested in four PMP Intelli-Tissue EcoEc Premium machines for its Oki mill in Indonesia.

Machinery supplier PMP said the technology "guarantees achieving ultra-low media consumption with a total energy usage of steam and electricity as low as 1.74 MWh/t, while keeping the premium quality of final product".

It added that the machines "ensure efficiency higher than 95%, which is in line with APP requirements".

PMP's scope of supply include four new complete PMP Intelli-Tissue EcoEc Premium machines with core technological components such as PMP Intelli-Jet V Hydraulic Headbox, Intelli-Former Crescent Former, Intelli-Press and Steel Yankee Dryer with steam heated hood.

Scope of delivery also includes mechanical drives, systems for steam and condensate, dust removal, mist removal and lubrication, plus design, erection, start-up and supervision.

The project follows a previous order by the company in which 18 Intelli-Tissue 1600 EcoEc Premium lines were ordered for APP's Rudong, China plant, which will bring 620,000tpy of high quality tissue.

## GERMANY

### Metsä Tissue divests napkin business to "focus on tissue"

Metsä Tissue is to divest its napkin business to keeper Group, part of the Mutares Group.

The transaction includes the real estate, machinery and equipment and warehouses at the Stotzheim mill as well as the Fasana and Mondial brands.

The mill's personnel is also planned to be transferred to the new owner.

Esa Kaikkonen, chief executive of Metsä Tissue, said: "The napkin business has not reached profitability targets lately and napkins are not part of our core offering anymore."

"Thus we have explored all the alternatives for the business to find the best solution for the Stotzheim mill and its personnel."

"When completed, the divestment will support Metsä Tissue's strategy and enables us to focus on our core business, producing high-quality tissue and greaseproof papers close to our customers."

The transaction is planned to be completed in the first quarter of 2020.

### Metsä Tissue invests €10m in Raubach mill

Metsä Tissue is to boost its professional tissue papers production after announcing plans to invest €10m in a production line at its Raubach mill.

The new MF4 production line will have an annual production capacity of 16,000 tonnes and will produce folded hand towels.

Chief executive Esa Kaikkonen said: "Demand for professional tissue paper products is growing and according to our strategy, we are increasing our capacity to meet the market situation."

"The investment will strengthen our market position especially in Western Europe."

Production on the new line will begin during the second quarter of 2021.

Metsä Tissue is a part of Metsä Group.

**METSÄ TISSUE IS TO BOOST ITS PROFESSIONAL TISSUE PAPERS PRODUCTION AFTER ANNOUNCING PLANS TO INVEST €10M IN A PRODUCTION LINE AT ITS RAUBACH MILL. THE NEW MF4 PRODUCTION LINE WILL HAVE AN ANNUAL PRODUCTION CAPACITY OF 16,000 TONNES AND WILL PRODUCE FOLDED HAND TOWELS.**

## CHINA

### Hubei Zhencheng announces tissue expansion; 10 TMs ordered in first phase

Hubei Zhencheng Paper has revealed plans to increase its tissue capacity at its existing mill in Qingji industrial park, Hubei province.

The first part of the project is likely to include ordering 10 new TMs from a local machinery supplier and each with a capacity of 20,000tpy.

In total, the company aims to increase the site's tissue capacity by 500,000tpy in two phases over a period of 36 months.

All the tissue will be furnished with market bamboo or wood pulp.

The Taison Group acquired Hubei Zhencheng in February 2019.

The Shanghai-headquartered pulp and paper giant set up a wholly owned subsidiary, Taison (Hubei) Household Products, to run the asset.

The Taison Group has been carrying out ambitious tissue expansion plans in different parts of China.

Last year it commissioned four 60,000tpy TMs at its Jiujiang mill in Jiangxi province.

It is also building two new 60,000tpy TMs at a new facility in Suzhou city, Anhui province, with startups scheduled for the end of this year.

## MEXICO

### Papel San Francisco improves energy efficiencies at Mexicali site

Papel San Francisco has invested in a complete stock preparation and deinking line for its new tissue production line at its Mexicali facility.

Supplied by Kadant Black Clawson, the tissue mill said it needed a sustainable, highly-flexible solution with the ability to expand production while maintaining the high quality of the finished product.

Additionally, this system needed to process what is anticipated to be increased levels of furnish contamination from the market going forward.

Dario Palma, director of operations at Papel San Francisco, said: "The high efficiency solution from Kadant will support our growing production goals and enable us to get the very best in an increasingly challenging market environment."

The investment included Kadant Black Clawson's foundations fibre processing solution, which includes end-to-end recycling and de-inking fibre processing.

**HUBEI ZHENCHENG PAPER HAS REVEALED PLANS TO INCREASE ITS TISSUE CAPACITY AT ITS EXISTING MILL IN QINGJI INDUSTRIAL PARK, HUBEI PROVINCE. THE FIRST PART OF THE PROJECT IS LIKELY TO INCLUDE ORDERING 10 NEW TMS FROM A LOCAL MACHINERY SUPPLIER AND EACH WITH A CAPACITY OF 20,000TPY. IN TOTAL, THE COMPANY AIMS TO INCREASE THE SITE'S TISSUE CAPACITY BY 500,000TPY IN TWO PHASES OVER A PERIOD OF 36 MONTHS.**

Papel San Francisco has provided the consumer and commercial markets with high quality personal care paper products for over 35 years.

The line is scheduled to be up and running in September 2020.

## EL SALVADOR

### Alas Doradas boosts high-quality tissue production

Alas Doradas has invested in a Valmet-supplied Advantage DCT100HS tissue production line, adding 35,000tpy to the site's production. The order includes a de-inking plant and an extensive automation package, as well as a Valmet Performance Center agreement to support efficient production with Industrial Internet.

The new tissue machine will have a width of 2.8m and a design speed of 2,000 metres/minute. Valmet's scope of delivery will comprise a tissue production line featuring complete Deinking plant and an Advantage DCT 100HS tissue machine.

The machine is equipped with OptiFlo headbox and Valmet cast iron Yankee cylinder as well as the Advantage

technology including ViscoNip press, AirCap hood, WetDust dust system and SoftReel reel. The delivery also includes an extensive automation package with Valmet DNA, Valmet IQ quality controls, Industrial Internet applications, Valmet Performance Center agreement and tissue line training simulator. Engineering, supervision, training, start-up and commissioning are also included in the delivery.

The new tissue line will fulfill Alas Doradas' demand for new capacity of high-quality tissue products in the region.

Start-up is planned for the first half of 2021.

Paul Ekman, Alas Doradas chief executive, said: "Our cooperation with Valmet started with the rebuild of our existing machine where the press section was upgraded with an Advantage ViscoNip press combined with Advantage ReDry technology.

"With the results achieved, we are convinced that Valmet's technology is what we need to differentiate from competition and become the frontrunner in the Central American tissue market."

Alas Doradas is one of the three main manufacturers of tissue paper in Central America.



Advantage DCT100HS start-up team: Alas Doradas and members of Valmet



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# CANADIAN TISSUE COMPANIES INCREASINGLY BUYING AND BUILDING SOUTH OF THE BORDER

CONSUMPTION PER CAPITA SECOND ONLY TO THAT OF THE US, WITH STRONG COMMERCIAL AND AFH SECTORS BACKED BY HIGH LEVELS OF ADVANCED TISSUE TECHNOLOGY.

Canada enjoys the world's longest demilitarised border with its only land neighbour, the United States. It is a vast country, but the population tends to concentrate along the southern border with the United States. As a result, Canada's consumers tend to be more like Americans, and this extends to tissue paper consumption rates and habits.

United States tissue companies Scott Paper and Procter & Gamble once had a significant presence in the country. Kimberly-Clark is now the only USA-based company operating a tissue mill there and Canadian tissue makers are increasingly buying and building assets south of the border including Kruger, Irving, and Cascades. The recently refreshed trade agreement between Canada, the United States and Mexico continues to support strong trade ties.

Canada's 2019 population is shown in Figure 1 at just under 36 million, growing at about 0.72% per annum, which is only about 10% of the population of the United States. Figure 1 also shows the country's real GDP growth rate dropping with the global recession of 2007 and then recovering to about 3% growth and settling out to about 2% in 2019.

Figure 2 shows unemployment and inflation over the same period.

Unemployment spiked from about 6% in 2007 to almost 8.5% in 2009. Unemployment has steadily decreased over the next ten years of economic recovery. Inflation is also shown in Figure 2, tracking at just under 2%. Canada's economy is more focused on natural resources than the United States resulting in occasional divergences.

Canada's close relationship with the United States requires some comparison to evaluate the economics of consumer demand. Figure 3 illustrates the adjusted Canadian GDP purchasing power per capita over the recovery period as blue bars. The line graph shows the relative Canadian dollar currency strength versus the US dollar. The wide swings shown are frequent and alternatively enjoyed by consumers crossing the border for shopping.

Tissue Trade volume analysis is required to evaluate the region's consumption and production. FisherSolve Next™ provides quick access to UN trade data to help



**Bruce Janda**  
Senior consultant, Fisher International

visualise the trend. Figure 4 shows the trend of tissue exports from Canada to the top importers. The United States is the top destination for Canadian tissue exports with "all other" represented by a small slice. The total volume of tissue exports has decreased somewhat over this period, while domestic demand has grown.

**KIMBERLY-CLARK IS NOW THE ONLY USA-BASED COMPANY OPERATING A TISSUE MILL THERE AND CANADIAN TISSUE MAKERS ARE INCREASINGLY BUYING AND BUILDING ASSETS SOUTH OF THE BORDER INCLUDING KRUGER, IRVING, AND CASCADES.**

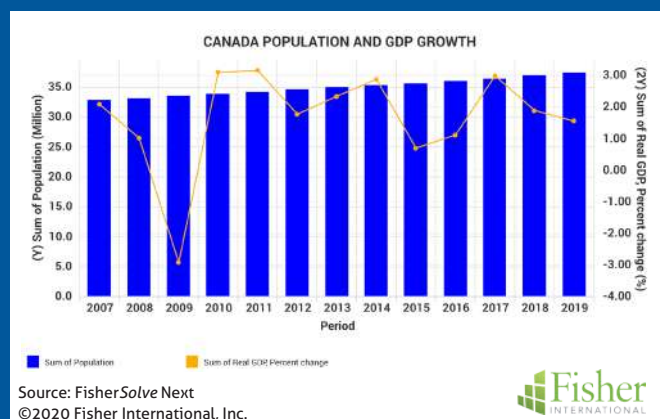


Figure 1



Figure 2



## THE TOP TISSUE SUPPLIER FOR CANADA IS THE UNITED STATES, WITH SMALL CONTRIBUTIONS FROM CHINA, INDONESIA, AND MEXICO. THESE TRADE PARTNERS AND THE UNITED KINGDOM (FOLLOWING BREXIT) AND BRAZIL, WITH LOW-COST INTEGRATED-FIBRE TISSUE, PROVIDE A BASIS FOR COMPARING CANADA TISSUE MACHINE QUALITY VERSUS RELEVANT COMPETITION.

Figure 5 shows the trend of Canada's tissue imports for the same period, which have tended to be steady to slightly increased over the past five years. Tissue imports tend to run about 75,000 finished metric tons ahead of the tissue exports shown in Figure 4. The top tissue supplier for Canada is the United States, with small contributions from China, Indonesia, and Mexico. These trade partners and the United Kingdom (following Brexit) and Brazil, with low-cost integrated-fibre tissue, provide a basis for comparing Canada tissue machine quality versus relevant competition.

The evolution of Canada's tissue production is illustrated in Figure 6. This chart extends to 2023 with projected volumes from new capacity. Each colour

represents the volume produced by a separate corporate producer. 2007 started with a total of ten producers and while several companies entered and exited the market, ten producers remained in 2019. The announced capacity increases through 2023 are included to show the expected relative production shares.

The projected change in the number of tissue machines in Canada over the same 2007 to 2023 period is shown in Figure 7. Tissue machine retirements (red) have kept pace with new machine additions (green). However, the overall capacity has increased with larger, new machines.

Canadians' tissue consumption per capita is second only to that of the United States and Scandinavia. Canada also has a strong

commercial, or AfH, tissue sector as shown in Figure 8. The 19% segment shown in the chart represents only the tissue produced in Canada compared to 33% produced in the United States. Canada also tends to import these product formats from the United States.

Further analysis of Canada's tissue production is shown in Figure 9, which shows individual tissue finished product volumes and tissue furnish types. Consumer bath is the most significant grade and is about 25%, and consumer facial and kitchen roll towels are also significant grades. The towelling also contains a small amount of BCTMP that is available in Canada and tends to enhance bulk and absorbency. The commercial tissue grades tend to use increased amounts of deinked recycled fibre.

Canada is also unique in the high percentage of production using advanced tissue technology to create consumer preferred structured tissue with improved softness, bulk, strength, and absorbency. Figure 10 shows that 27% of Canadian tissue production includes advanced technology.

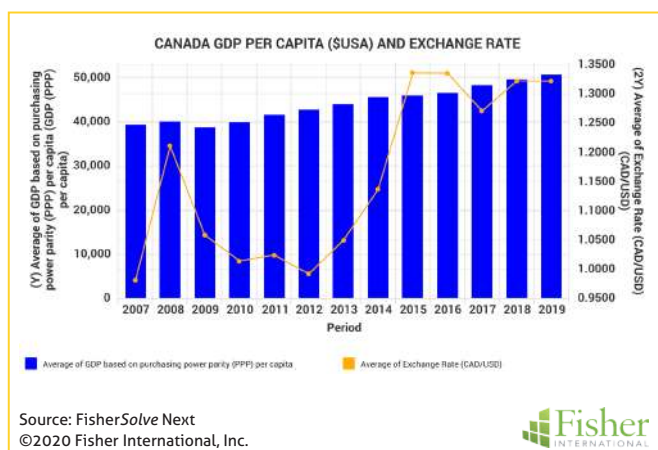


Figure 3



Figure 4

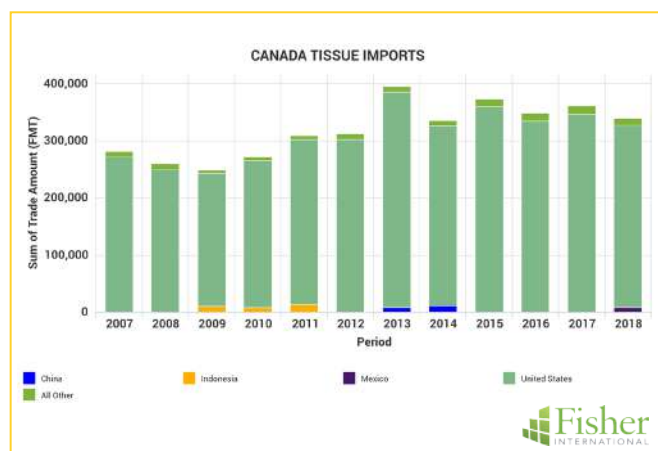


Figure 5

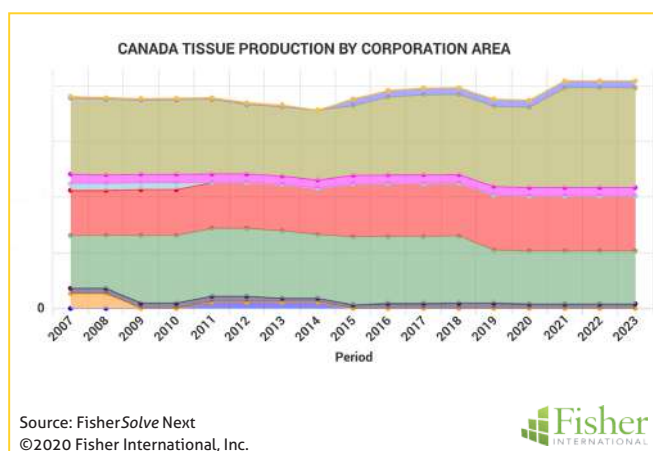


Figure 6



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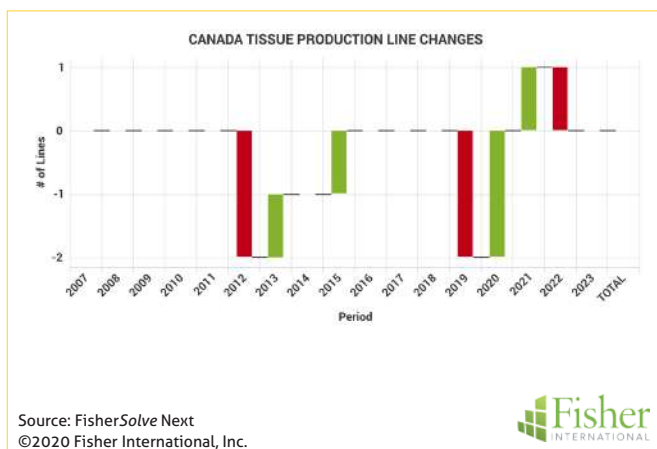


Figure 7

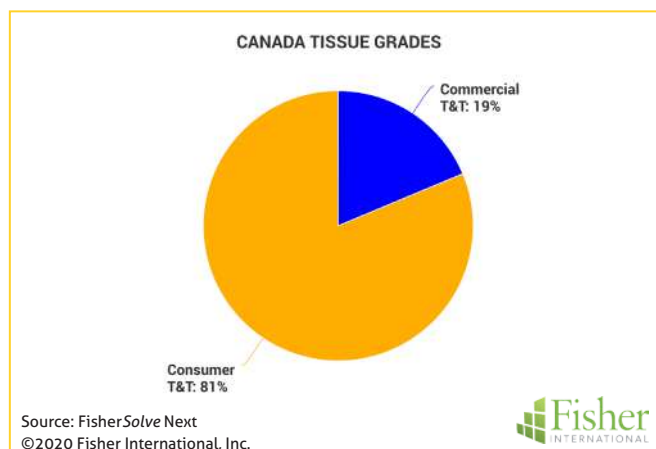


Figure 8

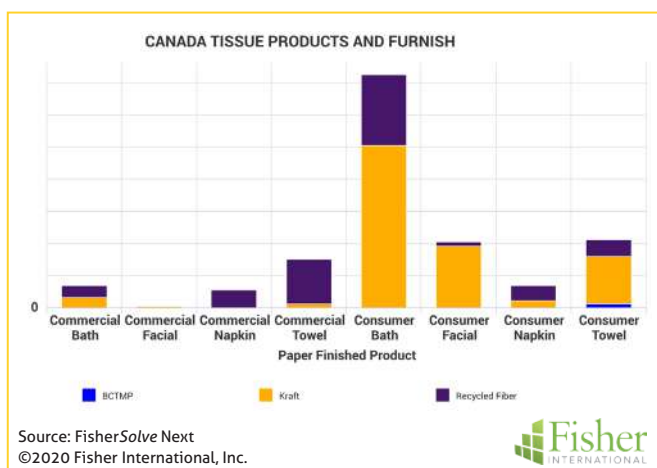


Figure 9

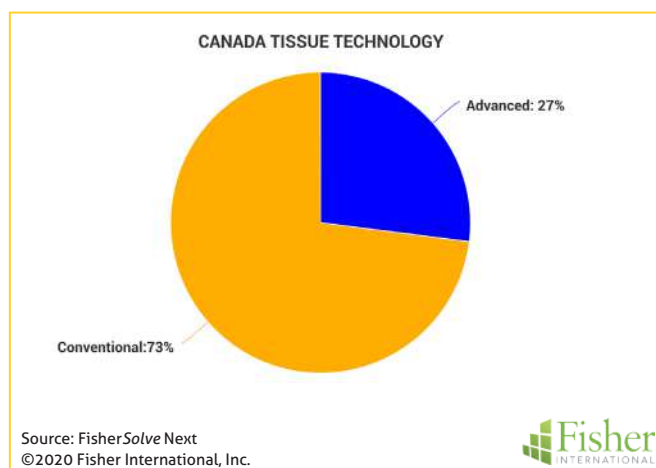


Figure 10

The application of advanced tissue technology by product format is shown in Figure 11. The advanced processes are mostly used in consumer bath tissue by volume, but it makes up much of the consumer towel volume produced. This is expected as advanced technology has the greatest advantage in towelling.

Figure 12 shows a further breakdown in the fibre sources for Canadian tissue production. Northern fibre that is native to the region makes up the most substantial portion of fibre. Canadian tissue producers have been trying to reduce imported eucalyptus consumption by blending in native northern hardwood.

Canada's average tissue machine quality (old and small) is relatively low compared to its trade partners as shown in Figure 13. Machines in the United States also tend to be older but are noticeably wider, however Mexico and Indonesia have newer and wider machines than Canada. China's machines are very new on average but tend to be very narrow.

Figure 14 shows the deployment of tissue advanced technology across the trade partner comparison group. Only the United States, Mexico and the UK have the advanced tissue production capacity that Canadian consumers are expecting.

The FisherSolve Next Cost Curves module offers an overall summary of the Canadian market and its tissue trade partners. Figure 15 shows that Canada's tissue production costs are relatively high but not too much different from Brazil or China. Indonesia and Mexico stand out with very low tissue production costs.

Figure 16 charts the carbon emissions per tonne of tissue produced compared to a set of trade partners. Canada has lower carbon emissions per ton, as coal is not a significant energy source since the country has abundant carbon-free hydroelectric power.

Brazil's tissue machines tend to be integrated with newer pulp mills that provide bio-based fuel for power generation, which is a significant advantage. However, Canada's tissue business also emits significantly less carbon emissions per tonne of tissue produced when compared to China, Mexico, and the United States.

Canada has largely recovered from the global recession that began in 2007; personal income is growing and population growth is slow but positive, in part due to an increase in immigration. Canada's tissue producers are stable and expanding on both sides of the border with the United States. It is reasonable to expect that tissue consumption will continue to grow per capita in addition to the small population growth.

While Canada's tissue machines tend to be narrower and older compared to other global producers, the added input capacity has resulted in an improvement trend. Capacity growth is at a deliberate pace as several of the producers are also investing south of the

**CANADA HAS LARGELY RECOVERED FROM THE GLOBAL RECESSION THAT BEGAN IN 2007; PERSONAL INCOME IS GROWING AND POPULATION GROWTH IS SLOW BUT POSITIVE, IN PART DUE TO AN INCREASE IN IMMIGRATION. CANADA'S TISSUE PRODUCERS ARE STABLE AND EXPANDING ON BOTH SIDES OF THE BORDER WITH THE UNITED STATES.**



border. Advanced tissue technology is a larger than average share of production, second only to the United States. The lower carbon content of Canada's electric power is a major advantage, and this is expected to become a differentiator.

Will Canada's production continue to grow or will imports from the United States replace a larger portion of market demand? The renewed trade agreement and Canadian controlled investment south of the border warrant watching.

This article presents a static picture summary of Canada's tissue industry today. Fibre prices, exchange rates and environmental regulations will change, providing some participants with advantages and others with new challenges. Canadian tissue companies will continue to change hands and perhaps consolidate; neighbouring countries may invest in tissue-making capacity, thus affecting Canadian imports and exports.

## About Fisher International, Inc.

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

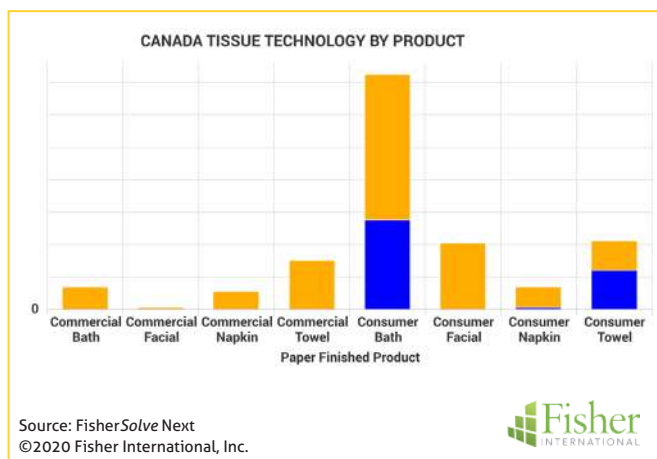


Figure 11

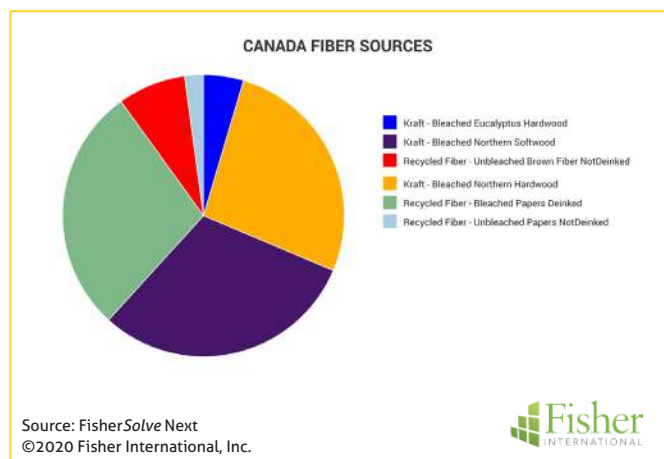


Figure 12



Figure 13

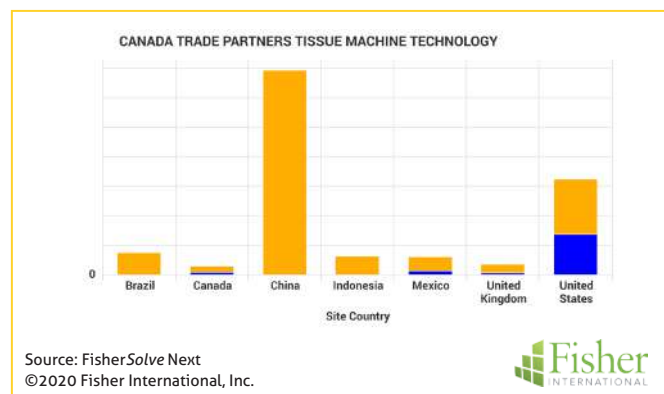


Figure 14

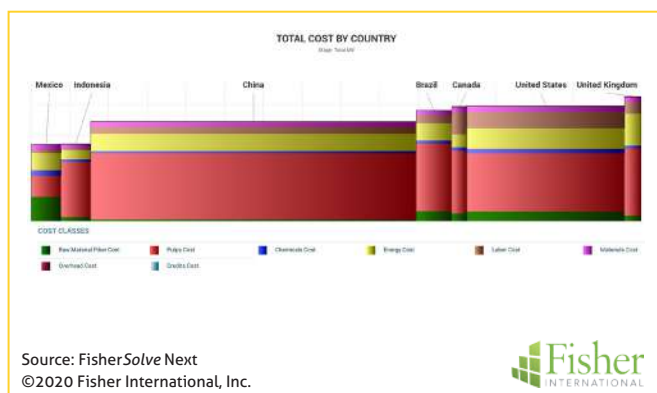


Figure 15

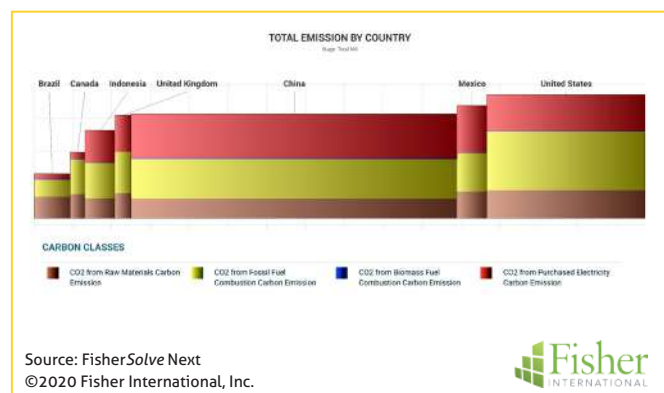


Figure 16





**nature is a perfect  
technology**  
**our technology  
is perfect for nature**

Our commitment is to provide **innovative technological solutions**  
to produce **sustainable tissue products**.

# CANADA: MATURE CONSUMER TISSUE MARKET UNDER PRICING AND COMPETITIVE PRESSURES

Lingering around 500,000 tonnes in retail consumer tissue sales in 2018 and 2019, Canadian consumer tissue maintains a slow pace of growth. The trend is not surprising for a mature market, with per capita consumption already at 13.5kg for retail tissue products – one of the highest in the world.

Given the market's developed state, key growth drivers of demand and sales stem from population and GDP trends. While population trends in Canada are marginally better, compared to the country's southern neighbour the US, they remain quite weak. Overall, the Canadian population is expected to see less than 1% growth year on year in the next five years and beyond. Coupled with already high per capita consumption and estimated unmet potential of only 83,000 tonnes, slow

population growth will continue to inhibit the demand.

## Private label pressure

Although similarly to many other markets, Canada has seen price increases implemented by many key brands and suppliers, pricing pressures remain high on the agenda. Accounting for a quarter of retail tissue sales, private label is already well-established in Canada, adding to pricing and profit margins pressures that branded products manufacturers have been grappling with. Offering a wide variety of products in value and premium ranges (also differentiated by more attractive packaging), private label consumer tissue has positioned itself as a competitor not only on price but also on quality. Loblaws – Canada's leading grocery retailer – offers



**Svetlana Udustlivaia**  
Euromonitor International's  
head of tissue & hygiene industry

a range of value products under No Name brand and mid-range to premium products under its President's Choice portfolio as well as products positioned as eco-friendly under PC Green label.

## Canada, retail tissue, % Y-on-Y growth

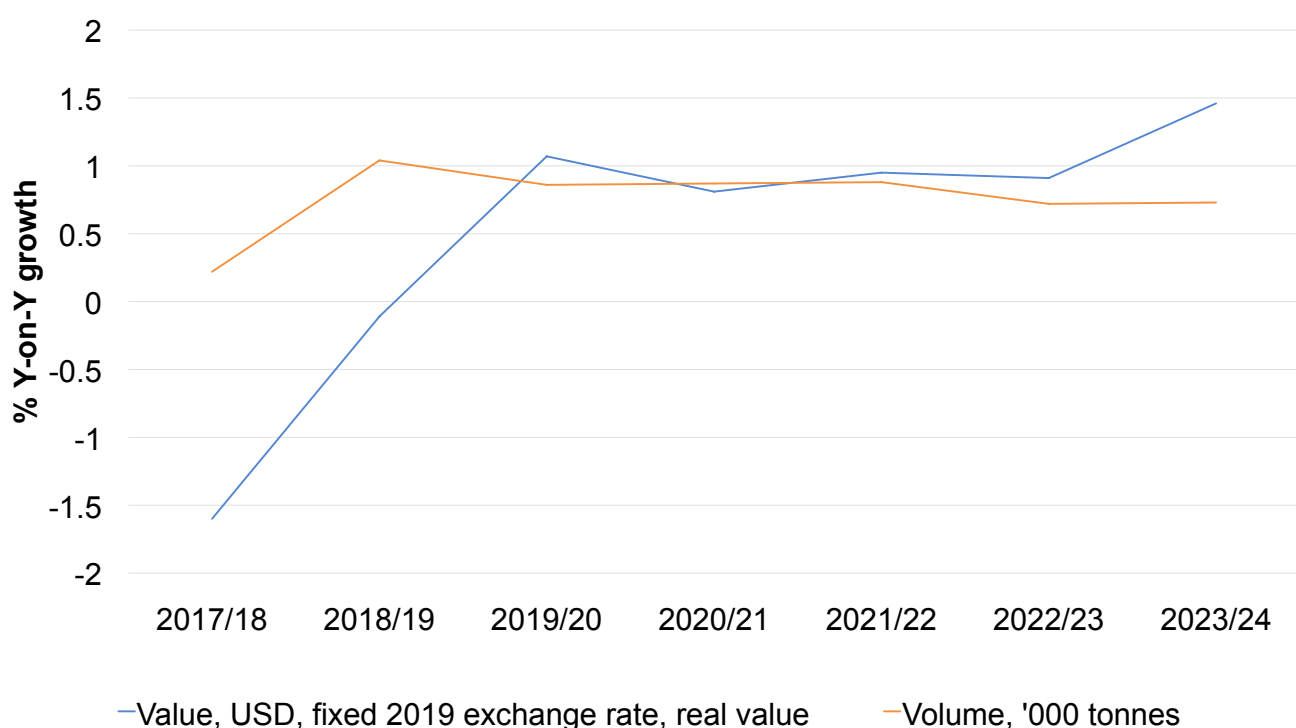


Table 1: Canada, retail tissue, % year-on-year growth

Source: Euromonitor International

## Canada, Intention to change the habit of purchasing private label in the next 12 month, % of respondents, 2019

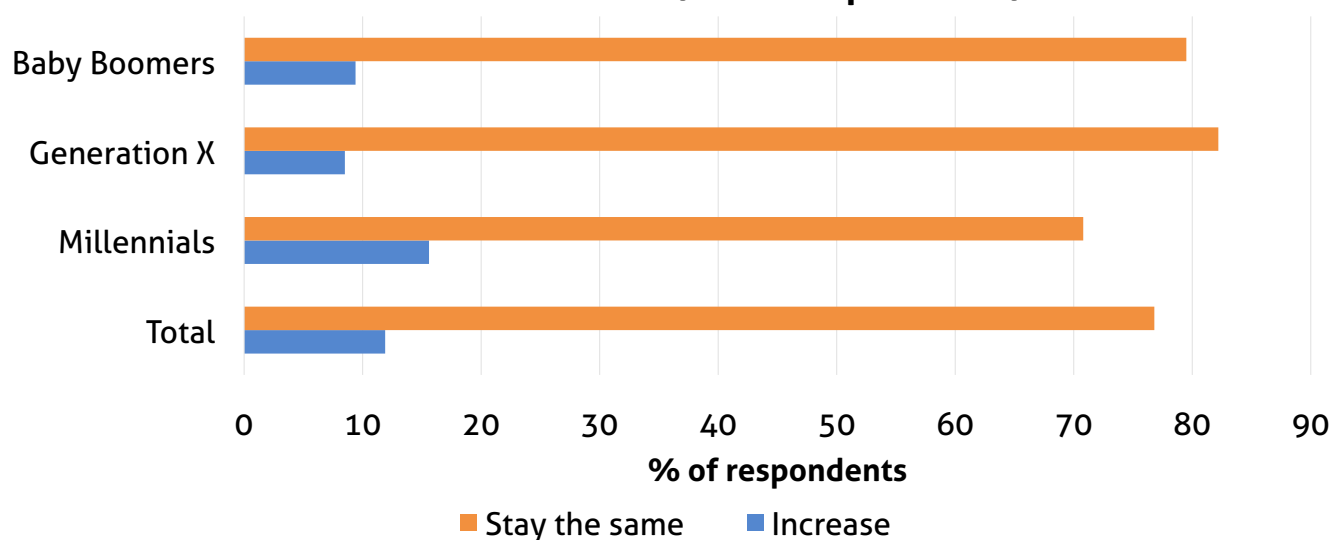


Table 2

Source: Euromonitor International

Euromonitor International Lifestyle surveys indicate that many Canadians are quite thrifty, including the millennial generation. In 2019, 49% of millennials in Canada indicated that they liked to find bargains, compared to 44% in the US. Furthermore, 18% of Canadian millennials regularly sought private label products in 2019. Moreover, the surveys indicate that 16% of millennials in Canada, compared to 12% average, were planning to increase their purchase of private label products.

This is not to say that the Canadian market and consumer is not receptive to premium products, including direct-to-consumer premium brands with eco-friendly and ethical positioning. For instance, Australia-based Who Gives a Crap allows for shipments to Canada from its US site. Some consumers noted and shared commentary on the products on Canadian social media and blogs, such as ecoden.ca. Furthermore, Canada sees the emergence of its own direct-to-consumer subscription based premium brands, such as for instance Wipe On Us. The company offers tissue based on bamboo fibres and soon is expected to launch hemp-based

products. Furthermore, it does not use plastic packaging and is said not to use any chemicals. While still small and selling at a premium, the company has been getting positive reviews on social media.

Similarly to the US, while the majority of consumers generally look for bargains, premium subscription brands appeal to a segment of the younger generation that seek a combination of convenience, novelty, uniqueness, and eco-consciousness. Euromonitor Lifestyle surveys released in 2019 indicated that 32% of millennials would rather buy fewer but higher quality items; 20% indicated that they are looking for unique and hard to find brands, and 11% look for tailored and personalised shopping experiences – something subscription models can provide.

### Sustainability and green trends

On the whole, Canadians have shown increased responsiveness towards environmental protection, and their awareness towards green products is expected to result in higher usage. According to Euromonitor Lifestyles surveys, 18% of millennials in Canada

stated that buying eco-/ethically-conscious products makes them feel good.

However, despite the motivation towards eco-friendly products, sales of eco-friendly tissue products remain relatively small. While higher price is considered a factor, the reason is driven by the purchasing behaviour of the majority of consumers who are looking for larger case packs and long-lasting rolls which are not typically provided by eco-friendly products. Hence, while opportunities in environmentally sustainable products exist, especially when eco-friendliness is combined with other features, insurgent brands are not yet expected to generate sales comparable to those of mainstream products. The latter will continue to face pressure stemming from market maturity, slow population growth, and private label.

All in all, the coming years will see consumer tissue brands fighting for share of consumer spending on a number of fronts. Premium level will increasingly see battles between premium-positioned portfolios of mainstream brands vs subscription-based insurgents, while value and mid-range price level mainstream brands will continue to fight with extensive private label products, including also expanding private label by key e-commerce players like Amazon. Winners in the marketplace will likely come as a result of good understanding of consumer segmentation, well-designed pricing strategies, tangible product benefits to consumers, and omnichannel retail distribution strategies to capture the diversity of consumer needs.

**SIMILARLY TO THE US, WHILE THE MAJORITY OF CONSUMERS GENERALLY LOOK FOR BARGAINS, PREMIUM SUBSCRIPTION BRANDS APPEAL TO A SEGMENT OF THE YOUNGER GENERATION THAT SEEK A COMBINATION OF CONVENIENCE, NOVELTY, UNIQUENESS, AND ECO-CONSCIOUSNESS. EUROMONITOR LIFESTYLE SURVEYS RELEASED IN 2019 INDICATED THAT 32% OF MILLENNIALS WOULD RATHER BUY FEWER BUT HIGHER QUALITY ITEMS**



# REBRAND AND M&A TAKES CASCADES UP TO 4TH BIGGEST PRODUCER IN NORTH AMERICA

Like all tissue companies the easing of the pulp price crisis has been warmly welcomed. Like most, the Canadian green and private label leader focussed on productivity... creating a lean and efficient operation ready for the new baseline.

THE COMPANY'S MOST RECENT RESULTS AT THE TIME OF GOING TO PRINT REPORT "SOLID CONSOLIDATED THIRD QUARTER RESULTS IN 2019", ADDING THAT ITS TISSUE SEGMENT HAS DELIVERED "VERY ENCOURAGING YEAR-OVER-YEAR AND SEQUENTIAL FINANCIAL IMPROVEMENTS".

**TWM** first met Cascades Tissue Group in 2017 at the company's impressive Candiatic site, a 15-minute drive from Montreal, Canada. At the time, it was the fifth largest tissue producer in North America and had recently undergone a substantial rebrand to evolve from a small company ethos into a new larger global tissue player.

In 2018, it reported sales in Canada worth 31% of its total at CAN\$419m, with 41% for branded products and 59% private label products, with 41% for the AfH market compared to 59% At-Home. In the USA, the remaining 69% of sales represented CAN\$933m, with a market sector of 25%

branded and 75% private label, and 51% AfH with 49% At-Home. Cascades Tissue Group also has a significant presence in the jumbo rolls open market, with CAN\$150m of sales.

The company's most recent results at the time of going to print report "solid consolidated third quarter results in 2019", adding that its tissue segment has delivered "very encouraging year-over-year and sequential financial improvements".

The end of the decade has also seen Cascades be one of the very few North American tissue producers involved in merger and acquisition activity in the past few years. In November 2019, it acquired America's Orchids Paper Products Company



**Productivity improvement:** Cascades Tissue Group's recently renovated head office in Candiatic, Quebec.

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Applying the latest wet end lotion technologies from Buckman can raise TSA softness by as many as 8 points with improved drainage and retention and minimal impact on coatings.

### SPRAY-ON APPLICATIONS

Buckman spray-on softness applications have increased the TSA softness of 100% recycled 13.5 gsm tissue from 57.8 to as high as 70.4 with no significant impact on base sheet tensile.

### Take your tissue to the next level.

To learn more about on-machine softening technologies, contact your Buckman representative, or visit **[buckman.com](http://buckman.com)**.



**Fluff and Tuff:** the company's leading Canadian brands.

for US\$207m. The move significantly boosted its retail tissue offering across the region and also moved Cascades up to the fourth largest producer tissue producer in the North American tissue market.

Cascades said at the time that the Orchids acquisition was a "low risk strategy to modernise Cascades' asset portfolio", as well as representing "compelling optimisation opportunities" for its tissue platform.

In March 2019, Jean-David Tardif was announced as the president and chief operating officer of Cascades Tissue Group, succeeding Jean Jobin. Tardif first joined Cascades in 1997 and has worked successively for each of the company's three groups. Previously a mechanical engineer, he has also worked as vice-president Consumer Products from 2013 to 2017. Since December 2017, he has held the position of vice-president, operations for the Cascades Containerboard Packaging division. TWM interviewed him for our Canada Country Report.

### TWM/1: At the start of a new decade, what are your main plans for the year ahead?

"Our objectives during 2019 and now also in 2020 are to continue to improve our productivity. 2018 was a difficult year for all of the tissue industry and its producers. This was mainly due to the repeated increase in pulp prices. So in response to that, we will continue to focus on our productivity. We are putting ourselves in a strong position so that we can operate leanly and efficiently in the long-term, so we can continue to be the preferred choice for our customers.

"More immediately, my main plans for the role are to focus on the site's health and

safety, improve efficiency of our plants and be more cost effective."

### TWM/2: What changes are you seeing in terms of customer requirements for environmentally-friendly tissue products in Canada?

"We are definitely seeing the popularity of sustainable products coming back in Canada. We had seen a decrease in sustainable products in North America as there was a lot of extra tissue capacity coming on board.

"We are seeing more and more news about climate change, people are again becoming more conscious and wanting to buy green products for their homes. As a result, we are seeing a substantial increase in demand for these types of green products.

"We're also seeing a lot of attention on plastics, and the reduction of plastics in packaging.

"We were a pioneer in sustainable products 55 years ago. Even as recently as January 2019, Cascades Tissue Group was ranked 49th by Toronto-based Corporate Knights in its annual list of the Global 100 Most Sustainable Corporations in the World.

"We want to continue and elevate our environmental efforts even further."

### TWM/3: How do you plan to grow in 2020?

"For now, our focus is on reorganising our assets in Canada and the USA. We are number one for private label in Canada, and the fourth largest overall in North America. We will continue to focus on our geographical footprint. We have 18 sites in total in North America and no current plans to expand our footprint outside of this region.

"Elsewhere, innovation has been and continues to be a big focus for us in terms of our growth strategy. In Canada, we are active in AfH and consumer products and we have refreshed our national brand and had great success with it here. We are also in the professional market which is showing lots of potential for us."

### TWM/4: What's your presence in the Canadian market and do you plan to invest in new technologies?

"We have five sites in Quebec with six paper machines and a total of 30 converting lines. We also have great projects on the table. While we can't talk more about it at this time, it is something that we have been working on and has been approved. It includes four new converting lines that will come on stream this year. They will be for private label and branded products."

**"WE ARE SEEING MORE AND MORE NEWS ABOUT CLIMATE CHANGE, PEOPLE ARE AGAIN BECOMING MORE CONSCIOUS AND WANTING TO BUY GREEN PRODUCTS FOR THEIR HOMES. AS A RESULT, WE ARE SEEING A SUBSTANTIAL INCREASE IN DEMAND FOR THESE TYPES OF GREEN PRODUCTS."**



## TWM/5: How vital is the private label market in your growth strategy?

"We are the leaders in the private label market in Canada. Private label is more developed than it is in the USA market, but it is also under-developed in comparison to the European market, where some countries have as much as 50%-70% private label. Here it's 30-40% private label in Canada, so there is a lot of potential for us to develop it even further.

"We have a great relationship and partnership with the major retailers. We are working together to offer the consumers the right product at the right value."

## TWM/6: How does the Canadian market compare to America's, and what potential do the two hold for you?

"US brands aren't very present in Canada because of the exchange rate, it's not favourable for them. However, for the Canadians in the USA, the rate is creating an opportunity for us.

"We are seeing more of a shift to ultra-premium products here, so there is a lot of opportunities for us. Sustainable

**"WE ARE THE LEADERS IN THE PRIVATE LABEL MARKET IN CANADA. PRIVATE LABEL IS MORE DEVELOPED THAN IT IS IN THE USA MARKET, BUT IT IS ALSO UNDER-DEVELOPED IN COMPARISON TO THE EUROPEAN MARKET, WHERE SOME COUNTRIES HAVE AS MUCH AS 50%-70% PRIVATE LABEL."**

Jean-David Tardif

products are also a small percentage of the production in Canada, but this market is growing and has a lot of opportunities. Our Canadian brand Fluff and Tuff are also very successful.

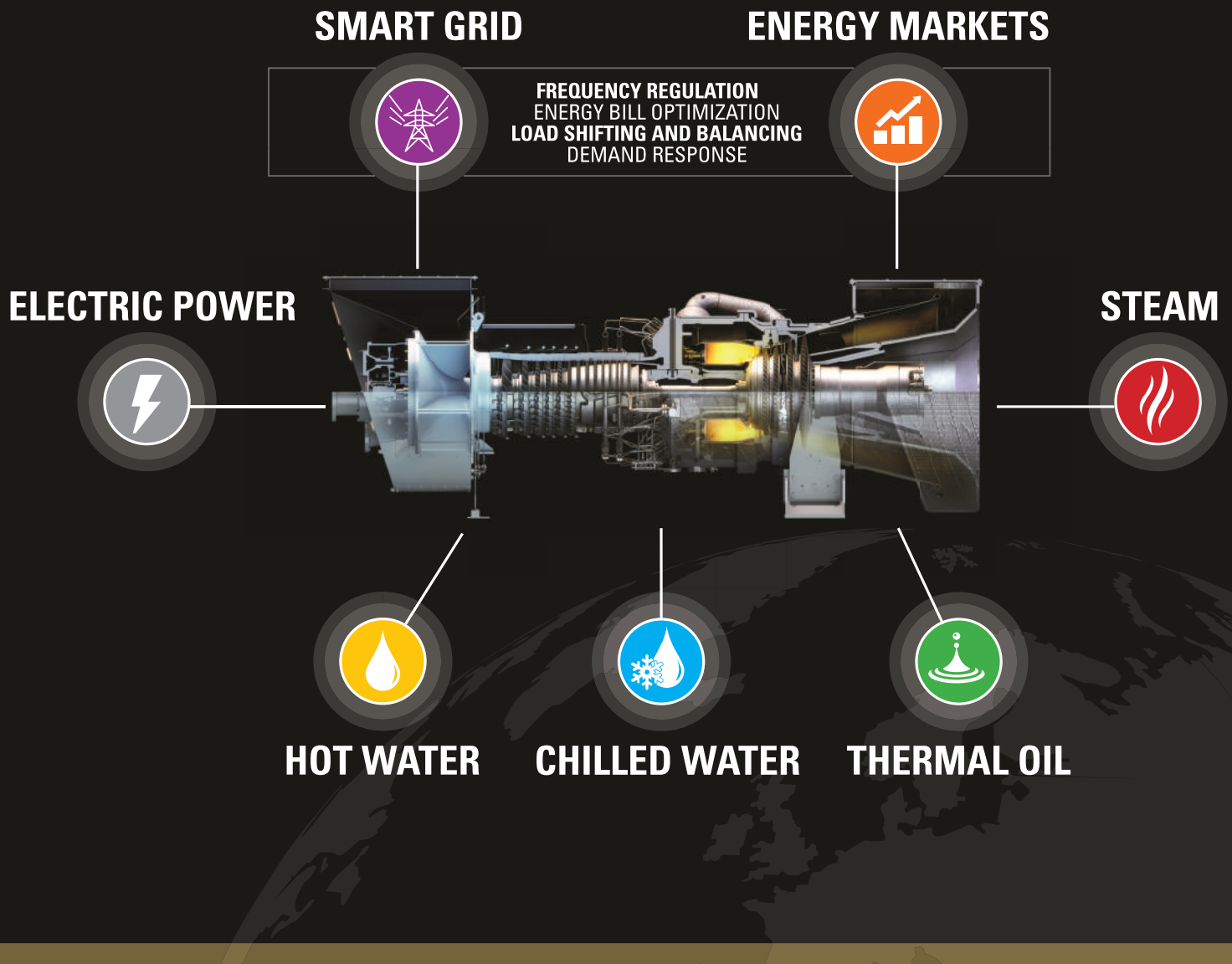
"The Canadian market is smaller compared to American opportunities. We

don't see important growth for us in the mature Canadian territories, but all our Canadian based plants are making products for our US customers and we will continue to export in the future. We don't intend to grow our footprint outside of the North American market at this time."



**Growth potential:** the company has five sites in Quebec with six paper machines and a total of 30 converting lines.

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# TISSUE: INDISPENSABLE FOR GAME CREATORS

The multi-dimensional board and construction game Vektorelle® has advanced simple building blocks to new educational levels covering geometry, mathematics and Cartesian space. Here pioneering siblings Stefano and Eleonora Vuga, designer and teacher, explain their creative process.

**What tissue products do you use the most in your home, work or for hobbies?**

"We use kitchen-roll and tissue the most. As a designer and a teacher, we often need to use these products to sketch, draw and prototype; so, in just a little space, we have a pretty intensive and peculiar usage of tissue paper. Before our hand drawings are digitally processed they are made in graphite, black ink, watercolour, gouache, or dry chalkboards. Tissue towels become an indispensable ally in absence of reusable cloth or sponges to regulate the ink's load on the top of the pencil. Tissue allows a careful modulation of the pigment's amount. Carefully touching the tissue with the top of the wet pencil we reach just the right amount of colour needed.

"While drawing, tissue can also become a peculiar tool itself. It distributes, adjusts, augments or reduces, even creates special textures on the illustration surfaces. When we move to prototyping, tissue is a valid tool for machinery cleaning purposes, especially on the double steps of cleaning and drying the bed of the printing machine. The bed has to be extremely clean to avoid imperfection on the face of the printed object laying on the crystal surface. A first mechanical removal of residual plastics from the bed is followed by a second step of cleaning with solvents and tissue paper, and finally dried again with tissue. On the printed objects, tissue becomes useful to remove dust and small imperfections previously detached from the main volume with a scalpel, capturing all this residual material. We are talking of PLA, so a biocompatible material which allows us to collect and trowl the used tissue towels with the disposable paper. The good aspect of using tissue towels for this final object cleaning stage is that we can easily reuse the same towel for a very long time, reducing waste."

**What's important for you when buying tissue products?**

"Independent of whether it's a brand or private label, if we are not in a rush, we tend to look at aspects like material provenience, finished product provenience (Km related to carbon emission), or any other information



on the packaging which can tell us about the actions the producer is taking in regards to the environment. It doesn't have to necessarily be something which comes with the product itself like pulp provenience, it can be an action taken in reforestation or NGOs; but we want to know that what we are buying is taking action about sustainability. For the usage, while sketching and hand drawing we tend to use generic/supermarket brand from Esselunga in Italy and El Corte Inglés in Spain. For prototyping usages on 3d printers and printed objects we use Scottex, which stays compact and maintains its shape without losing strength too quickly if wet with water or solvents. We do not stick to one brand or distribution channel. The nature of being environmentally-aware always moves our attention to the product in question. We want to constantly improve."

**How do you buy the products?**

"Amazon is a good recent discovery, as well as other local online-supermarkets, depending by the most convenient offer running at the moment of the purchase. Actually, this allows us to save time, especially for large consumption items as tissue paper, kitchen rolls, tissue and toilet paper are. And yes, it really helps buying in bulk online. It leaves in the past memories of complicated travels between the studio, or home, and the supermarket being overloaded with large bags. We always plan our monthly needs far in advance, so buying online came naturally."

**What have you noticed about the availability of tissue products in your home country compared to when you've travelled abroad?**

"We have to say that in terms of basic products, we find pretty much everything in Europe and the USA and we have never travelled further. Naturally the largest packaging and products come from the American market, which win first prize in terms of variety of product formats and buying options. In the EU, and increasingly in Italy and Spain, we have noticed that there is an increased and consistent attention from producers and distributors regarding sustainability issues, which is great."

**Do you spend more to buy higher-quality, environmentally-friendly products?**

"Not only do we buy green but we think and create "green". All our work is attentive to sustainability. The paper of our books where possible is 100% FSC. For our latest project, Vektorelle, presented in the Poster Session MIT LINC 2019 Conference, we aim to go 100% FSC and probably bioplastic. We have also been invited by HP to visit its 3D Printing and Digital Manufacturing Centre of Excellence in Barcelona. We are working both on crowd-building and contacting companies interested in participating or licensing the toys. It is not easy to support the environmental sustainability of a project with such conviction. And yet it is done."

*Based on the ongoing research "Embedding the Cartesian Space Principles in a Smile, an Inclusive Learning Method for K12" the board and construction game Vektorelle® by the Vuga brothers might see the light in 2020. Image and content patented by Vektorelle® <https://vektorelle.com/spiel-essen>. Written for TWM.*



# A NEW ERA OF CONVERTING CORE PRINCIPLES INTO GROWTH

'In the near future a learning machine will be capable of autonomously interpreting data and improving on its own performance under every condition.' Leading converting machinery suppliers highlight their ongoing technological developments. A TWM report.



**Enrico Zino**  
Global head of marketing,  
Fabio Perini



**Giovacchino Giurlani**  
Chief technology officer,  
Futura



**Carlo Berti**  
Sales director,  
Gambini



**Devrim Deniz**  
Managing director,  
ICM Makina



**Martin Kyles**  
President and chief executive,  
Maflex America



**Marco Calcagni**  
Sales and marketing director,  
OMET



**Andrew Green**  
Vice president of Tissue & Nonwovens,  
PCMC

Carlo Berti

**WHAT DO WE THINK THE INDUSTRY NEEDS US TO DO, TO CHANGE THE FUTURE AND NOT JUST LIVE IT? FOR THE FIRST TIME IN HISTORY, THIS YEAR US MILLENNIALS (AGED 25-40) WILL OUTNUMBER BABY-BOOMERS (55-75): THESE YOUNG ADULTS ARE MORE EDUCATED, MORE ETHNICALLY DIVERSE AND MARRY LESS THAN PREVIOUS GENERATIONS; THEY ALSO EARN MORE — THOUGH HAVING LESS WEALTH — AND LOOK FOR GREEN CHOICES, WHILE SPENDING THEIR MONEY (EVEN IN DISPOSABLES, LIKE TOILET PAPER OR KITCHEN TOWELS). WE'RE URGED TO FULFIL THEIR NEEDS AND DREAMS.**

## TWM/1: What key technical launches have you made in the past year and what was your reason for launching them?

**Enrico Zino, global head of marketing, Fabio Perini:** "It is estimated that over 21 million tonnes of tissue products, almost one third of the market, are destined to Away From Home products, with global demand driven by Northern America and Europe but growing very rapidly in the Asia-Pacific countries.

"In 2019 Fabio Perini presented Proxima S6, the cutting edge rewinder designed to meet customers' requirements in a market where product adjustments must be done continuously, performed simply by a command on the HMI control panel.

"Based on the proven Sincro Winding System, Proxima S6 can reach a speed of 600 m/min while drastically reducing product changeover times, since core diameter, roll diameter and length and perforation pitch can be adjusted directly from the control panel."

**Giovacchino Giurlani, chief technology officer, Futura:** "Our key launch in 2019 came about as a result of a technical partnership with Plusline. The Together solution is a revolutionary system which shortens the production process by eliminating several steps. In summary, Together collects the log from the rewinder and delivers a finished package. The system includes log trimming, log cutting and integrated packaging, all in one line, guaranteeing a continuous flow of product from converting to packaging. The optimised layout reduces the risk of product damage because of reduced handling.

"It is a compact solution which can be installed on any converting line, bringing multiple opportunities for those building a new facility, and those seeking to make their existing lines more efficient through increased productivity.

"The rationale behind Together is that customers are seeking to optimise space, manpower and performance to maximise their efficiency and competitiveness. There is also a constant drive to improve quality – a demand which Together also addresses by minimising damage."

**Carlo Berti, sales director, Gambini:** "Beyond AirMill – the greatest game-changer in the converting field in years – we've concentrated our efforts on professional rewinders. Just one focus in our mind: making user-friendly and money-saving lines. We like thinking in terms of 10-year time spans; we're at the beginning

Giovacchino Giurlani

**"OUR KEY LAUNCH IN 2019 CAME ABOUT AS A RESULT OF A TECHNICAL PARTNERSHIP WITH PLUSLINE. THE TOGETHER SOLUTION IS A REVOLUTIONARY SYSTEM WHICH SHORTENS THE PRODUCTION PROCESS BY ELIMINATING SEVERAL STEPS. IN SUMMARY, TOGETHER COLLECTS THE LOG FROM THE REWINDER AND DELIVERS A FINISHED PACKAGE. THE SYSTEM INCLUDES LOG TRIMMING, LOG CUTTING AND INTEGRATED PACKAGING, ALL IN ONE LINE, GUARANTEEING A CONTINUOUS FLOW OF PRODUCT FROM CONVERTING TO PACKAGING."**

of a new decade, so: how would we want our future selves to think of The Twenties, ten years from now? What do we think the industry needs us to do, to change the future and not just live it? For the first time in history, this year US millennials (aged 25-40) will outnumber baby-boomers (55-75): these young adults are more educated, more ethnically diverse and marry less than previous generations; they also earn more – though having less wealth – and look for green choices, while spending their money (even in disposables, like toilet paper or kitchen towels).

"We're urged to fulfil their needs and dreams: we have kind of a moral obligation to help them feel greener and keep more money in their pockets. That's our mission, as tough as it is."

**Devrim Deniz, managing director, ICM Makina:** "In 2019, we focused on improvements of our folding machines and we introduced a new range of V-folded tissue and towel machines, the "VENUS performance line". In connection with this we also focused on speeding up our Multifold towel production line, the "ZENITH performance line", from 200mpm to 250mpm.

"This is the century of information, and having the right information is the key to success. We launched these lines into the market after discussions with our customers and marketing feedback. Sales trends in 2019 showed a significant increase in single and multifold products for final products and related converting equipment. Reacting to this trend on time allows us to make progress."

**Martin Kyles, president and chief executive, Maflex America:** "In 2019, Maflex responded to customer demand for a reliable, affordable option for a flexible machine which can produce rolls with and without a core. We added capability to our HERMES Continuous Rewinder to allow a push-button change-over from running

traditional cored products, to coreless – without a hole. The production speeds of these options are 600m/min with cored product and 500 with coreless. We shipped multiple machines of this model in 2019 and are working on other projects to be shipped in 2020.

"Another response to market request was an Embosser Laminator with tool-free roll changes with a quicker, more reliable start-up time after roll changes. We added new technologies and a slightly different approach to our HERACLE Embosser. Our key features which differentiate our embosser from others are 1 – the upper web does not need to be removed for roll change; 2 – unlimited combination of interchangeable upper steel rolls – without the need to stop the machine; and 3 – HMI based recipe system to automatically phase rolls.

"To enhance the value of our highly flexible Rewinder lines, we added a second orbit system to our LADON Industrial Log Saw to increase the production speed to 120 cuts per minute. With a push of a button, the saw automatically transforms from the traditional orbit, utilised for high density large diameter logs, to the revised motion needed for smaller diameter logs. This option can be installed on most of our existing LADON saws in the field."

**Marco Calcagni, sales and marketing director, OMET:** "One of OMET's latest and most important news has been the launch of the interfolded ASV line in 2019. The first prototypes came out in 2018 but in 2019, in response to the market requirements, the new vacuum folding system reached the target: the line can easily reach up to 300m/min. Customers say this innovative technology was essential and has enabled OMET to become a leader in the folded products machinery market.

"2019 has also seen the rise of the TV840 TRONIC line. No manual operation

Andrew Green

**“THE PCMC TEAM LAUNCHED OUR XCut SAW FOR THE CONSUMER MARKET. THE XCut PROVIDES SUPERIOR CUT QUALITY WITH THE FASTEST SPEEDS. USING PCMC’S PATENTED SMARTFLOW TECHNOLOGY, THE INDEPENDENT SERVO DRIVEN LANE CONTROL ALLOWS FOR ULTIMATE THROUGHPUT. WITH THE TREND TO INCREASED ROLL DIAMETER FOR CERTAIN PRODUCTS, WHILE MAINTAINING HISTORIC SMALLER DIAMETERS, THE XCut FULL DIAMETER RANGE CLAMPS ALLOW OUR CUSTOMERS TO MEET ALL CONSUMER NEEDS WITH A SIMPLE PUSH-BUTTON GRADE CHANGE.”**

is needed with this machine as it can be completely controlled electronically. Each operation is servo-motorised, as well as supervised via remote controls. The reasons behind the design are market requirements and the operators’ need to have a user-friendly system, thereby a safer and better performing machine.

“No less important has been the development of digital printing applied to tissue converting. It is now possible to print variable data-customised napkins, placemats, handkerchiefs and paper towels. The digital printing system can reach up to 200m/min, keeping extremely high-quality and using food-compliant inks.”

**Andrew Green, vice president of Tissue & Nonwovens, PCMC:** “The PCMC team launched our XCut saw for the consumer market. The XCut provides superior cut quality with the fastest speeds. Using PCMC’s patented SmartFlow technology, the independent servo driven lane control allows for ultimate throughput. With the trend to increased roll diameter for certain products, while maintaining historic smaller diameters, the XCut full diameter range clamps allow our customers to meet all consumer needs with a simple push-button grade change.

“With the ever-increasing focus on safety, PCMC revolutionised the safety for operators when entering into the saw. With our automatic blade shield, customers can quickly and safely access the saw without needing to rely on PPE.”

**TWM/2: What global events have had the biggest impact on your business in the past year and how have you responded?**

**Zino:** “Plastic replacement and sustainable solution demand represent the two key trends impacting our business in 2019.

“Fabio Perini decided to reinforce the message about our effort providing eco-

friendly solutions, launching the campaign “made with green heart technology”. An umbrella covering the complete set of solutions dedicated to the environment protection.

“In 2019, Fabio Perini was the first company in the world to present a prototype of a kitchen/towel roll combining existent sustainable technologies, with an absolute novelty, the water lamination also for kitchen rolls.

“In addition to this new technology, Fabio Perini presented the glue free solutions, barring the use of glue both in lamination (Aquabond) and in the initial pickup of tissue around the core (Web Tuck system Rewinder), thus reducing the environmental impact and saving glue cost.

“Furthermore, we revamped the patented Solid and Solid+ coreless technology to produce full rolls that can keep the product’s structural characteristics, increasing by 16% the amount of tissue per roll with the same diameter, and attaining a 10% reduction of packaging required for the same amount of product transported.

“In addition, Fabio Perini recently presented a series of packaging solutions based on paper coupled with ecologic bioplastics, derived from vegetable starch and waste, creating a product whose characteristics are comparable to those of plastic polymers.”

**Giurlani:** “I wouldn’t point to single events but to environmental activism in general which is increasing the pressure on all responsible businesses to do what they can to reduce environmental impact and increase sustainability. Our launch earlier last year of JOI Hydro-Bond was very much in this spirit: as a glue-free ply-bonding solution it reduces glue consumption but goes further than that.

“There is also the factor of less transport for delivery of the glue itself and reduced

environmental load following disposal of the ply-bonded tissue paper.”

**Berti:** “In 2019, it happened that a Swedish 16-year-old girl decided to miss her school lesson, going on strike to demand attention on climate change. And she made her point. We all woke up and decided to act! Striving for getting more with less has always been a mantra at Gambini, but now it’s an unavoidable change of mind that we’re asked to do.

“2018 had been a difficult year, due to the spiking cost of cellulose; luckily, 2019 has brought the great news of stopping that increase, thus letting investment flourish again all over the world, in the Far East and America more than elsewhere. But we were prepared; as the saying goes: if life gives you lemons, just make lemonade!

“The market gave us expensive raw material; and we just made machines to consume less of it (and get the job done as good as ever). That’s where the AirMill’s inspiration comes from: born to achieve during the converting phase the same – or better – results (in terms of roll diameter and absorbency), using in the papermill less cellulose, less energy and less time (less complexity).

“AirMill brings the paper-making process in the converting plant, making customers save money, consumers feel no difference and Greta smiles!”

**Deniz:** “We believe living standards around the world are increasing, which places a greater demand on tissue needs. In the marketplace, companies are merging, big companies are buying small companies, and some companies are leaving.

“It is opening new doors for us. There have also been financial shifts with banks that have allowed our financial methods to change and orders to increase.”

**Kyles:** “Consolidations and acquisitions had an impact on new machinery sales in some markets. Maflex responded by providing technical and engineering services to evaluate machinery capabilities vs. current market needs. As companies acquired many older assists, Maflex was able to offer upgrades on both Maflex and other OEM’s machinery.

“The impact on our company was the balancing act of an already busy production schedule of new machinery and these additional unexpected upgrades and modifications which came our way.

“Fortunately, we were able to succeed, because of the increased efficiency of our recently renovated production and office





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# VOITH

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areas in our facility in Lucca.

**Calcagni:** "For sure the attention towards Industry 4.0 has had an important impact globally in 2019. Some factories replied with the realisation of new products, others worked at implementing the automation level of the existing ones. The focus on this has been really powerful.

"Our products are designed to be inter-connected electronically. All are arranged with electronical systems and this is the reason why they can be considered part of Industry 4.0.

"2019 has also suffered the problem of the increase in the cost of cellulose. Only towards the end of the year has the situation levelled off. But throughout the year, raw material's cost kept at high prices. OMET tried as much as possible to maintain the market share even at a time when investment was lowering."

**Green:** "High global fibre prices have our customers focused on the need to get more out of every asset on their floor. They will only consider purchasing new assets that emphasize high efficiency and reduced waste.

"Our customers are delighted by our PCMC modifications and process support that provide increased reliability and efficiency of their existing assets. Our PCMC leadership developed a special engineering team to focus exclusively on providing modification support. With controls obsolescence being at the forefront of every plant manager's concerns, our mods engineering team is working with customers to develop and execute both short term and long-term plans to reduce production risks."

### TWM/3: What new geographical areas are seeing an increase in demand for tissue products?

**Zino:** "No big news on geographical trends. China is still on top of the list with the highest compound annual growth rate of 6.2%. We see some interesting trends on the product side such as the "lotion tissue", introduced in 2018 and continuously growing, and a stable market for the "unbleached tissue".

"With regards to the installed base, we expect for the coming years a renovation of the converting line technologies and efficiency, a process that already started in the paper making."

**Giurlani:** "We have noticed that most regions of the world are now a potential market for high-level technology, whereas in previous years, less developed tissue

markets tended to base their machinery-purchase decisions on price. There is an acknowledgement that the benefits of high performance and output are not exclusive to developed markets, and independent companies are just as interested as multinational corporations.

"An important factor is labour costs: wherever these are on the rise, which is in most countries, producers see the value in high-level automation. If I were to single out two parts of the world where the market for high-performance converting lines has grown it would be the Middle East and Africa."

**Berti:** "Our North American challenge is a defining one. It is something we have thought about for a long time and whose consequences will affect our bottom line for years to come. Lately there's been a shift in the US market: people are starting to buy richer tissue products, they have been appreciating higher quality rolls. That's the trend we're chasing.

"Quoting a famous movie title, we were used to saying that the US is No Country for Laminated Rolls; well, now it is: and we're there to serve! Let's say it like Clint Eastwood would: we consider ourselves as if we were in halftime.

"The first half just ended: it led us to having a new headquarters in Green Bay, plus a great team of servicemen ready to dispatch 24/7. Now we're in the locker room, discussing how to win the game in the second half. Today, all that matters is what's ahead. And make no mistake: the industry is going to hear from us. The second half is about to begin."

**Deniz:** "We are receiving quite a big demand from Africa. The highest demanded machines are the household rewinder lines and napkin machines. Africa is a growing market. At ICM Machinery, we have become known as a multi-solution company that serves all of our customers'

needs, including important market leading multinational companies in Africa."

**Kyles:** "North America and Europe continue to be strong markets for Maflex. For the past several years, Eastern Europe has continued to be one of our biggest growth markets. These markets are transitioning from lower speed and manual type machinery to more automated, faster, flexible machinery.

"2019 saw the Spanish and Portuguese speaking countries stall for medium and small businesses. Many of them upgraded existing lines with new faster, more flexible rewinders, embossers, and log saws. Existing assets are being sold into other countries which can benefit from used lower speed, manual machines.

"Far-South East countries are growing faster, but with a low pro-capita consumption. We expect a big growth in the upcoming years. The MENA region, thanks to worldwide events, has experienced growth and has increased production up to good levels."

**Calcagni:** "Among the geographical areas that are growing the fastest in this field, the South American and Gulf countries are standing out the most. These areas present a trend of appeal towards all tissue products. Whole toilet paper rolls are definitely playing an important role, we're also seeing the interest moving towards facial tissue and napkins."

**Green:** "Central and Latin America are continuously growing markets where our innovative and reliable Forte and AMICA rewinding technology has fuelled important collaboration projects with new and existing players in that market. In order to support this growth, we have recently reconfigured and enhanced our sales and support team to better answer to the key activity in Central and Latin America."

Enrico Zino

**"CHINA IS STILL ON TOP OF THE LIST WITH THE HIGHEST COMPOUND ANNUAL GROWTH RATE OF 6.2%. WE SEE SOME INTERESTING TRENDS ON THE PRODUCT SIDE SUCH AS THE "LOTION TISSUE", INTRODUCED IN 2018 AND CONTINUOUSLY GROWING, AND A STABLE MARKET FOR THE "UNBLEACHED TISSUE". WITH REGARDS TO THE INSTALLED BASE, WE EXPECT FOR THE COMING YEARS A RENOVATION OF THE CONVERTING LINE TECHNOLOGIES AND EFFICIENCY, A PROCESS THAT ALREADY STARTED IN THE PAPER MAKING."**

Martin Kyles

**"THANKS TO OUR SOFTWARE AND INTERACTIVE HMI'S, CUSTOMERS CAN MONITOR THEIR PRODUCTION AND BETTER UNDERSTAND HOW TO RESPOND TO INCREASE EFFICIENCY. OWNERS AND MANAGERS CAN ACCESS DATA REMOTELY TO ENSURE PRODUCTIVITY IS MAINTAINING PEAK PERFORMANCE 24-7-365. ADDITIONALLY, MAFLEX IS CONTINUING TO INTEGRATE MORE ROBOTS AND AUTOMATIONS IN MACHINERY AND PROCESSES. THIS MINIMISES SAFETY EXPOSURE AS WELL AS INCREASE RELIABILITY/EFFICIENCY."**

**TWM/4: What are the latest automation features helping to improve production efficiency?**

**Zino:** "Fabio Perini presented the Tissue Performance Centre, a next generation technologic environment where expert engineers, supported by company data scientists, continuously register and analyse customers' data, to supply information on the machines' status and suggest improvements to maximize the overall equipment effectiveness (OEE) of the production lines.

"Thanks to a direct connection with the customers' machines, the Tissue Performance Centre can now work proactively, not just reactively as it used to in the past.

"The on-line visualisation of operating parameters allows a continuous evaluation of their status and helps pointing out potential anomalies.

"This continuous improvement will take us in the near future to a learning machine capable of autonomously interpreting data and improving on its own machine performances under every condition."

**Giurlani:** "With Plusline, we have seen and extension of higher-level automation into packaging. Futura's Andromeda remains the only system on the market which fully automates all processes from the jumbo reel to the rewinder, including

maintenance activities, in complete safety for the operator.

"In packaging the shortest time required for product changeover has been 30 minutes to an hour. But on the Together line from Futura and Plusline, changeover is actioned from the PLC – the only manual operation is changing the poly reel, which requires 5-10 minutes.

"Another innovation we have introduced is vision cameras. Unlike a standard camera, which relays images for interpretation by the operator, with vision cameras the images from the line are interpreted and instigate action, meaning the line can react and adjust automatically in response to issues with the tissue web or winding."

**Berti:** "We at Gambini have a new internal thumb-rule: if you say too many times words like innovation or flexibility, then consider starting over and beginning from scratch. Beware of catchphrases, like Industry 4.0 or digitalisation! We call them placeholder text: they don't mean anything, they're just on everybody's mouth. Well, not ours!

"We prefer staying on real issues, like: as a result of mass immigrations, the low-level working force is shifting towards the less-skilled spectrum and this must be accounted for, while designing the line of the future; and the Greta effect, as well,

should be factored in. The result is the machinery of the Twenties, which must consume less energy and less raw material. As simple as that. We like thinking of values, not just features: this is how we do our part as humans."

**Deniz:** "Smart machines are making operator jobs very easy and safe. Reducing the margin of human-caused errors in our latest automation features has an effect on improving production efficiency. We are learning from customer feedback and it shapes our strategies, as well as our short and long term targets.

"They want the machine to follow the correct procedure, as in a smart machine concept, and be programmed to apply new conditions step by step, including warning systems if a mistake has been made, and corrections, so the machine can keep running."

**Kyles:** "Thanks to our software and interactive HMI's, customers can monitor their production and better understand how to respond to increase efficiency. Owners and managers can access data remotely to ensure productivity is maintaining peak performance 24-7-365.

"Additionally, Maflex is continuing to integrate more robots and automations in machinery and processes. This minimises safety exposure as well as increase reliability/efficiency. Some examples of these are the Core-less automation in our Start-stop series rewinders, Automatic Roll Change System on our HERACLE Embosser Laminator, and Core Winding Process – check out our presentation at Tissue World Miami on 12 March at 1:00pm."

**Calcagni:** "OMET has been involved in Industry 4.0 for several years. All our machines are prepared for it, keeping in mind this new relevant concept. The benefit consists in a general supervision on the production and on the machines, as well as in the possibility of controlling and planning at best the energy usage."

**Green:** "Our team is working with customers to utilize the latest in IoT technology to bring data into the hands of our customers in ways that will allow them to make better decisions and take actions that will improve their OEE and efficiencies.

"Our SmartTOUCH HMI allows a whole new ability to understand the operation of the equipment. Utilising the latest research in lean cognitive ergonomics, our new HMI will allow for quicker training of operators in our challenging global labour market."

Devrim Deniz

**"SMART MACHINES ARE MAKING OPERATOR JOBS VERY EASY AND SAFE. REDUCING THE MARGIN OF HUMAN-CAUSED ERRORS IN OUR LATEST AUTOMATION FEATURES HAS AN EFFECT ON IMPROVING PRODUCTION EFFICIENCY. WE ARE LEARNING FROM CUSTOMER FEEDBACK AND IT SHAPES OUR STRATEGIES, AS WELL AS OUR SHORT AND LONG TERM TARGETS. THEY WANT THE MACHINE TO FOLLOW THE CORRECT PROCEDURE, AS IN A SMART MACHINE CONCEPT, AND BE PROGRAMMED TO APPLY NEW CONDITIONS STEP BY STEP."**



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## TWM/5: What new converting machine technologies will be leading the marketplace in 2020 and why?

**Zino:** "In addition to the same trends we followed in 2019, for the 2020 we see a high competition both on price and quality level on the mass market retailers.

"To help our customers to differentiate themselves and to develop new products with a limited time to market, Fabio Perini will launch in the first quarter of 2020 the new worldwide centre of excellence "Pivot Solutions", where the new Constellation Pilot line, based in Lucca, will be the "cherry on the cake".

"This line will be equipped with the latest technologies (aquabond, warm up, Self-Adjusting Machines to check paper caliper in real time, Leonardo lotioner...). In this new centre, our customers will be able to test products in real production conditions and execute promotional launches or even small production batches for small supermarkets or retail chains.

"An additional strategic asset is definitely the integration with the world of engraving, thanks to the synergies between Engraving Solutions and Roll-Tec."

**Giurlani:** "Together of course! We see this as a strong development for 2020 – the first orders have already been received just weeks after its launch. The increased demand for automation from the customer explains why Together's time has come. Customers are increasingly aware of the possibility which high-level automation offers to reduce costs and Together extends this to packaging.

"Responsibility towards the environment is also a major motivating factor and solutions to reduce use of plastic are increasingly popular. The ability to use thinner poly wrap on Plusline's Overpack technology is a perfect example of how to achieve the desired result in terms of protection, while slashing the use of plastic."

**Berti:** "Customers know what they need and ask for it very clearly. We can sum it up to one single request: make me as recognisable as you can. Which translates into: let me produce something unique, that nobody else can.

"Differentiation is the key: we know it's a gigantic and strategic leap, as no one wants to feel one among thousands. But that's our job and we know how to do it. Our lines really provide this kind of power to our customers: it's no magic, it just comes from how they're carefully designed, to adapt

Devrim Deniz

**"SMART MACHINES WILL BE LEADING THE MARKET. USER-FRIENDLY OPERATION INTERFACES, EASY-OPERATE AND SETTING FUNCTIONS FOR TRAINEE TIME AND AI, AND THE CLOUD SYSTEM WILL BE IMPORTANT. COMPLETE LINE SOLUTIONS FROM ONE SOURCE WILL BE MORE IMPORTANT FOR MAINTENANCE AND SERVICE. CUSTOMERS WANT TO HAVE MACHINERY THAT SPEAKS THE SAME LANGUAGE, AND WANT ONE COMPANY TO BE BOTH THE CREATION SOURCE AND THE SOLUTION."**

to different cultures, markets and customs."

**Deniz:** "Smart machines will be leading the market. In 2020, user-friendly operation interfaces, easy-operate and setting functions for trainee time and artificial intelligence, and the cloud system will be important.

"Aside from that, complete line solutions from one source will be more important for maintenance and service. Customers want to have machinery that speaks the same language, and want one company to be both the creation source and the solution. If we can offer complete solutions for our customers, they will be confident in the solutions we offer in the future."

**Kyles:** "Our customers are looking for safe, efficient, and flexible machines. They expect fully automatic machines with push-button control of automatic parent reel changes, core diameter change, embossing pattern change with auto set-up, and HMI recipe product changes. This allows them to minimise safety risk, to reduce manpower, and increase efficiency.

"Maflex machinery and innovations allow our customers to become more competitive in their respective markets. Their operator's focus changes from running the machine, to controlling quality and monitoring efficiency. Their sales and marketing groups can easily drive and/or respond to product marketing changes without additional time and money required to purchase new machinery."

**Calcagni:** "New products will be launched both for tissue and interfolded market during 2020/2021. Everything will

be focused on an increase of efficiency, security of the operators and an extreme attention towards power consumption."

**Green:** "There's a general trend toward more automation in the converting line that is consolidating and taking new exciting directions. This trend started several years ago, driven by the need for quicker changeover times and more flexibility.

"While features like automatic steel roll change and parent reel change are considered standard options, more sophisticated automation packages and technologies are available to the customer to increase safety, productivity and quality. The converting line is no longer isolated from upstream and downstream equipment, but finally considered a key part of the entire production system, thanks to smart and connected machines and advanced data analytics. Those technologies are really changing the converting world.

"Flexible converting solutions continue to drive customer behaviour – specifically those that adapt quickly to changing market conditions and distribution channels, with an increasing awareness and focus on maintenance costs, long-term serviceability and ease of operation and training."

Marco Calcagni

**"NEW PRODUCTS WILL BE LAUNCHED BOTH FOR TISSUE AND INTERFOLDED MARKET DURING 2020/2021. EVERYTHING WILL BE FOCUSED ON AN INCREASE OF EFFICIENCY, SECURITY OF THE OPERATORS AND AN EXTREME ATTENTION TOWARDS POWER CONSUMPTION."**

# 70% OF CONSUMERS MAY BE ROUTINELY BUYING CONSUMER PACKAGED GOODS ONLINE IN FIVE TO SEVEN YEARS

Millennials and Generation Z are moving into a powerful position to dictate how economies respond to their needs. Tissue is asking them what they want. Report by Pauliina Hämäläinen, analyst, and Sanna Sosa, principal, AFRY Management Consulting.



**Sanna Sosa**  
Principal,  
AFRY Management Consulting

The world we currently live in is very hectic. In an average American household, over 70% of every adult works full time. Children's school days are long, and they have more and more after-school activities. Someone needs to shop groceries, take care of the household, do laundry, clean and cook. But if there are only 24 hours in a day, how do we manage it all? We are constantly rushing from one place to another, scrolling through the news, emails, and social media on our phones – always staying online.

Luckily, many of the retailers have been able to understand that all the consumers need is convenience, which is why online shopping has become one of our biggest life savors.

What could be more convenient than being able to order to our needs and get them delivered directly to our doorsteps?

According to the US Census Bureau, by the end of the third quarter of 2019, US consumers had spent about \$442bn in online retail, which is 10.8% of the total retail sales in the US. E-commerce sales were 12.6% higher in the third quarter of 2019 than what they were in 2018.

It is believed that 70% of consumers may be routinely buying consumer packaged goods (CPG) online in five to seven years.

Private label tissue sales are expected to reach third of all retail tissue sales by 2023.

E-commerce has helped many families' lives by being able to deliver all the necessities quickly to the consumers. According to Statista, Amazon is the largest online retailer and made up to 50% of the total online retail sales in the United States, whereas Walmart was holding the second place with 12% of the total online sales in 2019. Target was the sixth and Costco the ninth largest online retailers with 4% and 3% shares, respectively, of the total e-commerce sales in the US.

## What do we know about today's Millennials? What is their buying behaviour like, what do they prefer?

Only 1% of Amazon's sales comes from its private labels, but when divided into categories, Amazon branded CPGs sales are growing fast at reported 81% last year. In 2015, Amazon introduced a Prime Day, which is their own "shopping holiday" like Black Friday or Cyber Monday to its Prime members.

According to Business Insider, buying household goods on Prime Day is the most inexpensive way to stock up on the basic household products. In 2019, the best deal was Seventh Generation's 48-roll pack of toilet paper for \$16.45, when its original

**ACCORDING TO BUSINESS INSIDER, BUYING HOUSEHOLD GOODS ON PRIME DAY IS THE MOST INEXPENSIVE WAY TO STOCK UP ON THE BASIC HOUSEHOLD PRODUCTS. IN 2019, THE BEST DEAL WAS SEVENTH GENERATION'S 48-ROLL PACK OF TOILET PAPER FOR \$16.45, WHEN ITS ORIGINAL PRICE IS \$34.99. HOUSEHOLDS, WHO HAVE MORE STORAGE SPACE, COULD HAVE SAVED LOTS OF MONEY.**





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price is \$34.99. Households, who have more storage space, could have saved lots of money.

Information Resources Inc. (IRI) reports that there was 3.8% growth in private label dollar sales, which was twice the rate of national brands in 2019. "Millennials represent the highest rate of adoption, increasing 10% since last year, and Generation Z isn't far behind."

Although private labels are often more affordable, the stores such as Whole Foods and Trader Joe's, also create an entertaining shopping experience.

Millennials expect technology to make their lives easier and that is why retailers are expected to develop tools and make everyone's shopping experience quick and easy: same-day delivery, self-checkout, scan while shop, as well as online and pick up in store.

Millennials, who have been known to have financial struggles, prefer private labels. Before, the reason for that used to be money because private labels gave them a chance to save a little. Many college graduated Millennials carry thousands of dollars of student loans, and they settle down later than previous generations – meaning that they do not have a significant other to split the expenses with.

But things have changed: now it is all about convenience and experience. Millennials do not see private labels as the older generations used to: private labels have now become products that deliver innovation, better quality and value for money. In addition, Millennials consume media in a completely different way than older generations used to: we now post and read reviews that other consumers have written online, and we base our buying decisions on other people's comments.

According to Cadent Consulting Group's "The Branding of Private Label" report: "60% of Millennials stated that they believe their store brand is better than

**MILLENNIALS, WHO HAVE BEEN KNOWN TO HAVE FINANCIAL STRUGGLES, PREFER PRIVATE LABELS. BEFORE, THE REASON FOR THAT USED TO BE MONEY BECAUSE PRIVATE LABELS GAVE THEM A CHANCE TO SAVE A LITTLE. MANY COLLEGE GRADUATED MILLENNIALS CARRY THOUSANDS OF DOLLARS OF STUDENT LOANS, AND THEY SETTLE DOWN LATER THAN PREVIOUS GENERATIONS – MEANING THAT THEY DO NOT HAVE A SIGNIFICANT OTHER TO SPLIT THE EXPENSES WITH.**

others, and 54% say that their choice of store is actually influenced by the retailer's store brand". It is believed that the better retailers are able to meet Millennials' needs and create nice and convenient shopping experience, physical and online, these retailers will set standards for the future.

### **Innovations to read Millennial mindset: "Have you seen it on Instagram?"**

To be able to stay on top of the game, companies must be able to meet the customers' wants and needs – which are constantly changing. Consumers' planned, and impulse purchases are driven by omnichannel and personalised advertisements.

That is why the manufacturers have started to use lean innovation method and now advertise their innovations directly to the consumers using social media, for example. Bringing new products to the market can be a hit or miss depending on how the consumers respond to it. Many CPG players have understood the fact that younger generations are worried and care about the climate change, which is why it is important for brands to keep this in mind when developing innovations.

According to the Center of Sustainable Business (CSB), when items such as all natural, non-GMO, plant-based, or Fair Trade were marketed as sustainable products, their sales went up 5.6 times faster than

conventionally-marketed products.

Since Millennials like to spend money, companies want to win their dollars and trust. The more brands listen to their targeted consumers and let them be a part of the product development process, the more likely it will catch their attention when making a purchase decision. Procter and Gamble (P&G) realised that they had to learn to "innovate how to innovate" and in order to be able to meet their targeted Millennial customers' needs, they had to learn to love the problem – not the solution.

After interviews and surveys, they observed that Millennials do not like to change toilet paper rolls often, and in some big metropolitan cities or single households it might even be challenging to store extra rolls where the space is very limited. P&G came up with an idea that what if they started making commercial-size rolls for customers to use at home so that they would not need to change the roll as often and it would not need space to store. Charmin developed a Freedom Roll and started advertising it online.

Consumers responded to it in a positive manner, and there is now "Forever Roll" in the market, which can be directly purchased on their website.

As Millennials are getting more excited about private labels, retailers have been able to respond to the demand and constantly keep bringing new products in to the markets. E-commerce plays a big part in today's retail sales, and in order to be the "go-to" brand in the future, private labels have an opportunity to take the lead and find innovative ways to attract the younger generations.

The more environmentally friendly the products are, the more Millennial and Generation Z consumers the companies are able to attract – and that way win their business.

**MILLENNIALS DO NOT LIKE TO CHANGE TOILET PAPER ROLLS OFTEN, AND IN SOME BIG METROPOLITAN CITIES OR SINGLE HOUSEHOLDS IT MIGHT EVEN BE CHALLENGING TO STORE EXTRA ROLLS WHERE THE SPACE IS VERY LIMITED. P&G CAME UP WITH AN IDEA THAT WHAT IF THEY STARTED MAKING COMMERCIAL-SIZE ROLLS FOR CUSTOMERS TO USE AT HOME SO THAT THEY WOULD NOT NEED TO CHANGE THE ROLL AS OFTEN AND IT WOULD NOT NEED SPACE TO STORE. CHARMIN DEVELOPED A FREEDOM ROLL AND STARTED ADVERTISING IT ONLINE.**



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# INTERNAL DISTRIBUTION – LARGELY EXEMPT FROM TECHNOLOGICAL IMPROVEMENTS – OFFERS THE BEST OPPORTUNITY TO IMPROVE CUSTOMER SATISFACTION

Producers and distributors face tough challenges responding to rapidly changing consumer demands in facilities and warehouses not designed to handle them. The one constant is that whatever is done today will change tomorrow. Report for TWM by William Nelson, president, Elettric80.



**William Nelson**  
President,  
Elettric80

Who isn't facing daunting questions regarding the changing landscape of distribution? As economic fortunes have improved, conversely the distribution ecosystem has become ever more complex with tissue producers facing at least some of the following challenges:

- Changing retail and AfH distribution channels and requirements
- Increased labour costs
- Scarcity of reliable entry and mid-level employees
- Transport companies dictating who they will serve based on a producer's "on-time" availability
- Increased meteorological events causing disruption of transport
- Loss/waste due to quality and accuracy deficiencies of incoming and outgoing goods
- Product traceability requirements
- Coordination of shipping needs and

inventory availability

- Sustainability, environmental concerns
- Safety of workforce

The digital economy has added further to these challenges. We are truly living in a moment that is very rich in opportunities for companies that embrace the value created through efficient "distribution" of goods which for the purpose of this article we consider as both internal and external distribution. The premise of this article is to look at distribution through the lens of what is possible when applying integrated automation and smart software solutions.

## Considering opportunities in internal and external distribution

Internal distribution for our use herein is considered the movement of goods inside the four walls of your plant or goods



**Integrated automation and smart software solutions:** distribution through the lens of what is possible.



**Product personalization:** consumer demand is necessitating many multiple SKU trailer loads, mixed SKU on pallets and smaller formats

movement from plant to plant (P-2-P), or plant to your distribution centres (DC), whereas external distribution is defined as the movement of goods from your production facility to final customer (P-2-C) or customer controlled DC (P-2-DC). Goods are defined as raw materials to make a product (parent rolls, glue totes, pulp bales, pallet stacks, KDF etc.), and finished goods produced inside your plant and shipped through a distribution network (finished pallets, unit loads, display pallets).

Internal distribution is one the most overlooked value generators as the calculus for automation normally hinges on headcount reduction which is usually limited due to the nature of the work being normally of low receptivity.

Nevertheless, the trend towards full automation of raw materials movements is providing strong returns with respect to reduction of waste and damage (example: parent roll waste reduction of ~1%-2%), production equipment uptime improvement through timely replenishment of raw materials, real-time raw material consumption and warehouse management assists in targeting waste and order points to reduce redundant inventories.

The reality today is that all functions related to raw materials movements have been automated, including unloading of raw materials from the truck trailer. Automation

provides a smart feedback loop to the plant manager with respect to input materials that make the value-added products your consumers purchase.

The traditional domain of automation has been finished goods handling connected to a production site warehouse. Most of the work consisted of full pallet load shipments with relatively few SKU per truck load being shipped to a DC.

Today, this world is evolving in directions that are yet to be fully understood. The one constant to consider is that whatever is done today will change tomorrow.

We are seeing the growing influence of consumers requesting more personalization of products thereby necessitating many multiple SKU trailer loads, mixed SKU on pallets, smaller formats...a literal plethora of options that production facilities and warehouses were not designed to handle.

The fall back strategy has been to ship single SKU pallets on single SKU trailers to

a DC for mixing and rework. This is where things get really interesting: our work in the food and beverage industries, which usually trend ahead of tissue as far as consumer preferences is concerned, teaches us that the lines between a production site and a DC are becoming very blurry.

Add to the equation that every time a product is transferred P-2-P or plant to DC an extra layer of cost is implicated through multiple handling (costs), raw material waste due to re-packing (sustainability), product damage (customer satisfaction) and so forth. Factor in the higher labour rates and DC or 3PL and you end up with a volatile mix that is very hard to control.

### Enter smart automation in the external DC environment

Whereas past paradigm stated that DC costs could not justify automation, a confluence of the factors stated above have

**THE TRADITIONAL DOMAIN OF AUTOMATION HAS BEEN FINISHED GOODS HANDLING CONNECTED TO A PRODUCTION SITE WAREHOUSE. MOST OF THE WORK CONSISTED OF FULL PALLET LOAD SHIPMENTS WITH RELATIVELY FEW SKU PER TRUCK LOAD BEING SHIPPED TO A DC. TODAY, THIS WORLD IS EVOLVING IN DIRECTIONS THAT ARE YET TO BE FULLY UNDERSTOOD.**



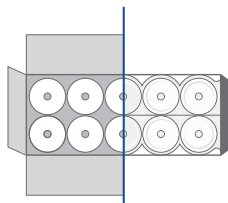
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generated a high demand for integrated automation solutions in distribution centres that include:

- Automated unloading of finished goods and raw materials from trailers
- Put-away and retrieval from floor storage, racks and high-density storage systems at same site
- Automated trailer loading
- Layer picking systems with auto replenishment
- Case-picking for mixed pallet loads using voice picking software
- Yard management software
- Product traceability software
- Transportation optimisation planning software

Today, all of the functions of your typical distribution/mixing centres are orchestrated through automation. Planning and sequences of movements are made through a smart decision-making software that integrates all the operations of the DC into one virtual brain that assures timeliness, accuracy and consistency all while providing the operation's management with capabilities to manage output in real-time and forecast future demand requirements such as truck trailer arrival times.

As we have seen in the food and beverage sectors, added-value generated through movement of a product mix customised to maximize the opportunity that what you produce and how you distribute it most closely matches what final customers want to buy; in other words, availability of your product in the format end-users want, where they want it and when is proving to be a winning bet.

### Taking the DC to our production sites

Imagine for a moment that your in-plant warehouse is managed so efficiently that you can reduce P-2-P and P-2-DC transfers. Likewise, think about all those products that get re-packed, all the materials thrown away. Both scenarios are realities we have learned to live with but neither enhance the value of your product.

While most tissue producers have worked diligently to improve their production efficiency through replacement of older, more maintenance intensive, less flexible assets with newer state-of-the-art paper-making, converting and packaging, internal distribution networks have largely be exempt from any technological improvements and, in our estimation, offer the largest opportunity to improve

final customer satisfaction while shaving off plenty of hidden costs that only become apparent once modernization has taken place.

Why not bring the functions of a DC inside your production warehouse? In fact, customers who have applied integrated automation and software solutions into their internal supply chains have realized benefits including:

- Improved on-time shipping
- Increased warehouse efficiency in terms of fill factor, saturation and accuracy
- Decreased waste of raw materials, damages in warehouse
- Better employee engagement
- Stable, consistent material flows
- Better decision making
- Safer, less hectic work environment

Our travels around the developing world have taught us that we can do more with less. Think for a moment about regions that have gone direct from no phone to a cell phone, or from no centralised power grid to a power source in-situ. In both cases, suppliers were not subject to traditional constraints.

Neither did they pretend to blow up the existing regimes as we so often hear about our fables about "disruptors". Instead, we are talking about the application of consolidated technologies in an environment uninhibited by past conventions. The same is possible through the application of smart decision-making software and integrated into a plant hardware backbone.

Of course, there are logistics issues to consider – availability of product in a geographic location primarily – but erasing double handling, repacking and the like would certainly free up resources for a new distribution landscape where plants continue to produce efficiently high volume products that are mixed at the source with lower volume products brought from elsewhere.

### Who's going to pay for this stuff?

Actually, economic benefits of the integration automation solutions vary from place to place, however it is not unusual to see returns on investments fully realised in 18-36 months based on simple savings generated through reduction of direct costs of operation.

Often times we are told that the factors cited in the paragraphs above turbocharge the economic returns, but most customers

are reluctant to share the secrets as to what extent these "residual" benefits kick start overall operational efficiency and economic returns.

To a great degree, distribution is a low-hanging fruit that has been considered in a fragmented way. The production site is tasked with pumping out standard widgets at the highest rate possible while distribution is tasked with transforming what they are given into a unit of sale and getting to your customers as cheaply as possible. The question is no longer: Why is our distribution network set up this way? It's history, and maybe we don't really know for sure, unfortunately. And maybe we should not worry about it. What we do know is that once an automation culture takes hold, the positive results become the starting point for all future expectations.

### ELETRIC80 and BEMA

The tailor-made solutions developed by Elettric80 and BEMA ensure a significant improvement in factories and DC efficiency. Innovative technologies automate all material flow movements starting from inbound of packaging material all the way to automated trailer loading of finished goods.

The main systems produced by Elettric80 include palletizing robots, a wide range of automatic guided vehicles (LGVs/AGVs), high speed robotic stretch wrappers, pallet control systems, robotic labelers, layer picking and repacking solutions, and automated high-density warehouses (ASRS) with shuttles or cranes.

The entire flow is centrally managed from SM.I.LE80 software platform (Smart Integrated Logistics) which ensures a direct connection between production systems and optimizes all operations from raw material reception to warehousing and shipping. From our office in Chicago we also offer a complete range of customer service support, with 24/7 remote and on-site assistance.

As of today, Elettric80 has completed nearly 300 integrated factories in various parts of the world and installed over 2000 robotic systems and 4500 automatic laser-guided systems. This extraordinary growth can be attributed to valorization of people, investments in research and rapid adaptation to changing market needs.

*This article was written for TWM by William Nelson, president, Elettric80.*



# PULP & PAPER

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# IN A WORLD WHERE SPEED TO MARKET AND DYNAMIC PRODUCTION FLOWS ARE CRITICAL, ADVANCES IN MOBILE ROBOTICS HAVE LITERALLY DRIVEN TECHNICAL LEADERS INTO POSITIONS OF ULTIMATE STRENGTH.

While initial capital investment in a mobile robot with control software and interfaces and changes to existing systems may cost close to \$200,000, the return on investment is often fewer than two years. Report by Paul W. Hill, business development manager, Reko Automation Division.



**Paul W. Hill**  
Business Development Manager,  
Reko Automation Division

Successful manufacturing today requires highly organized and safe workspaces. Mobile robots can help you achieve these goals and are a key technology piece to provide proactive in plant material planning and transportation.

The mobile robotic revolution is already highly engaged in distribution and logistics facilities and will eventually touch everyone directly including last mile deliveries to your front door.

In this world where speed to market and dynamic production flows are critical, advances in Mobile Robotics have quite literally driven technical leaders into positions of ultimate strength.

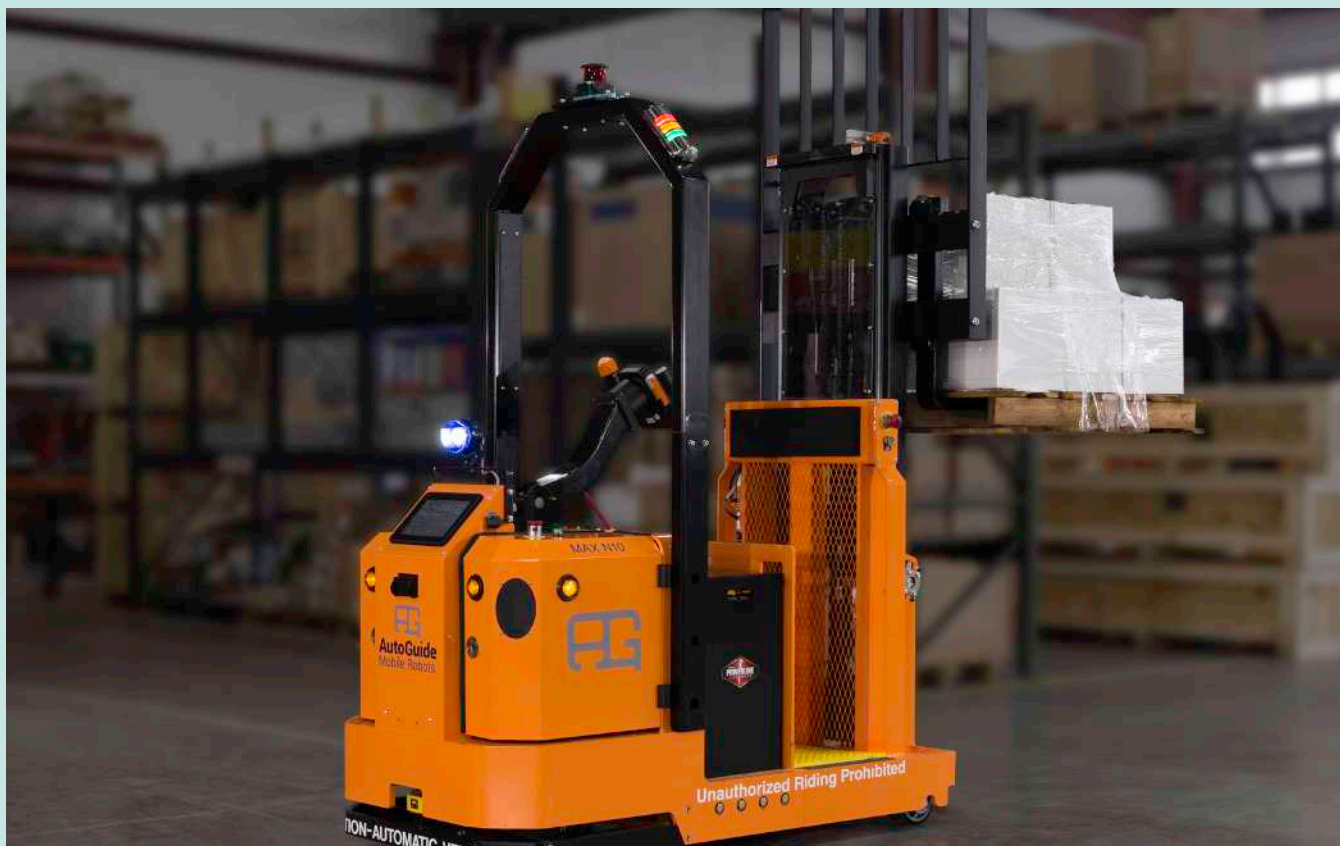
Tissue plants depend on effective

material flow processes to deliver uninterrupted production.

Incoming pallet based raw materials, case and box materials must be delivered efficiently and timely to automated or manual equipment, and warehouse locations.

In tissue plant material handling, there are three types of applications. The first concern truck pallets loaded and unloaded to a loading dock lay down area (LDA). Operators and forklifts are best suited here due to the high variation and the need for quality control in the process.

Another type of application occurs between in plant processes. This sequential material handling is tied to the cycle times



**Uninterrupted production:** tissue plants depend on effective material flow processes



of the associated processes and is usually best handled by traditional conveyance systems.

The third application describes moving the unloaded materials in the lay down area (LDA), to the warehouse, ASRS or directly to a manufacturing process, all depending on demand. Mobile robot systems are a great fit for this batch type of material handling. Their mobile robot software optimises and plans the best priority and path for the mobile robots. The in plant MRP system or operator provides the order information for the mobile robot system to fill.

### Mobile robot are available in many styles and technology configurations

For tissue plants there are three key styles. First and the most popular for pilot projects are those for a direct replacement a conventional forklift. These mobile robots look like a forklift, have a set of forks and can carry 1800lb payloads, can lift up to five foot and can travel at speeds up to four mph.

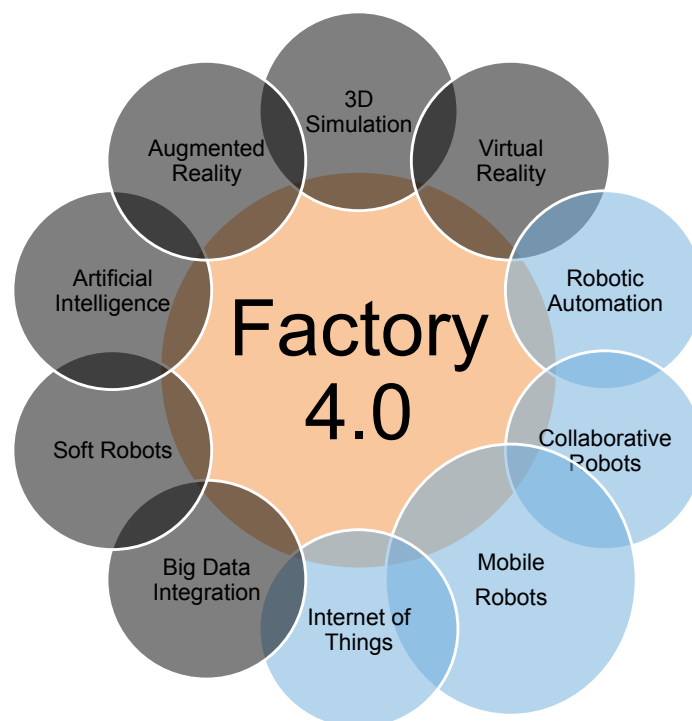
Secondly for larger or heavier loads a tugger or towing style mobile robot can move up to 10,000lbs. These robots require transfer stations to pick up and drop off their loads. Some are equipped with onboard conveyors to allow the transfer of full and empty pallets simultaneously.

The third and newest style can support high bay fulfillment centres with up to a 30ft reach.

When selecting a mobile robot application type and robot style, there are some potential pitfalls to be avoided. Mobile robots work best in areas with:

- a gradual floor slope
- minimal floor moisture
- an operating temperature above the freezing point of water
- an area suitable for a charging station.

Modern Mobile robots use lidar to navigate, avoid people and obstacles. Robots equipped with Lidar do not require magnetic strips mounted on the floor, instead navigate using laser light and a stored map of the facility. Some mobile robots have onboard vision systems to identify bar codes or RFID tags to verify the products they are moving. Some installations use vision systems at fixed pick and drop locations to speed the mobile robot's acquisition of a product. All mobile robots require a charging time which must be included in the calculation of the quantity of mobile robots required for your application.



Processes that can be serviced by mobile robots include, automation cells, box erectors, palletisers, stretch wrappers, receiving areas, warehouse and ASRS systems.

The key benefits of implementing a mobile robot automation solution include:

- Increased aisle safety and consistent lanes of material travel
- Increased production, OEE and utilisation by minimising plant process stoppages due to material shortages
- Longer and consistent material flows with 24/7 operation capability
- Reduced dependence on sometimes hard to get forklift manpower
- Reduced product and other equipment damage from forklift traffic

Mobile robotic technologies can have a very strong return on investment (ROI) when the above benefits are considered. The initial capital investment of the mobile robots, the control software and interfaces and changes to other systems all need to be considered. Each mobile robot may cost near two hundred thousand dollars. However, the ROI is still often less than two years.

Reko Automation is an integrator of mobile robots including those made by Autoguide. Reko and other integrators perform onsite assessments to determine the best type, style and features suited to a Tissue plant's requirements. For this assessment you will initially require your

plant layout, product types and mixes, production rates, process flows and storage requirements. Interface information to your MRP and other processes may also be required.

With this information and a site assessment, the integrator will be able to provide a solution that will be able to effectively tie in internal processes between packaging material flow and the main assets through to packaging. In addition, provide highly effective conveyance of finished pallets from palletising to stretch wrapping then to the warehouse and distribution areas of the plant.

There are increasing demands for Mobile Robotic solutions in North America. Market competitiveness demands combined with labor shortages are the key drivers. Leaders with a strong Factory 4.0 strategy and integration partner will seamlessly implement Mobile robot solutions for their right applications.

These leaders will improve their competitiveness by reducing costs, increasing production and most importantly improve their ability to proactively plan their future Factory 4.0 production.

Coming soon to your father's factory.

*This article was written for TWM by Paul W. Hill, business development manager, Reko Automation Division.*

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# SOUTHEAST ASIAN NATIONS – THE GROWTH WORLD LEADER IN TISSUE DEMAND

The emerging ASEAN trade bloc is being powered by a new generation of young spenders, quality products and low production costs. Economic analyst Phillip Lawrence reports on whether this really can be the Asian Century.

EI



**Phillip Lawrence**  
Economic analyst

**T**he nations of Southeast Asia are collectively the world's fastest-growing market for tissue demand ... experiencing faster growth even than the economic giant of the East Asia region to the north – China.

Eleven countries comprise the region – Brunei, Myanmar, Cambodia, Timor-Leste, Indonesia, Laos, Malaysia, the Philippines, Singapore, Thailand and Vietnam. All but Timor-Leste are members of ASEAN, the Association of Southeast Asian Nations trading block.

The rate of growth reflects increasing, if diverse levels of affluence, given the expansion of the middle-class. Upwardly mobile entrants are coming from the more impoverished strata in society. This region has a lot of growth potential for many years to come.

While the international market growth for tissue products is just under 5%, some markets in Southeast Asia are growing by 20%. There are logical geo-economic reasons for this situation.

The region is dominated by relatively young populations of largely rural inhabitants, who represent a pool of potential workers and consumers. Therefore, the Southeast Asia area is ripe for future growth, despite the economic problems that continue in the rest of the world.

Major western economies are stagnant or in decline at best, workers are old, and the transition to an urban population occurred some time ago. Many western populations are shrinking, and so an ageing cohort of customers is a cause for concern. The East Asian countries Japan and South Korea are already at peak development, very similar in many ways to Western nations. Their modernisation is spread well across their entire demography as they witness a decline in the size of their respective populations.

Southeast Asian countries have a different set of characteristics. In the past they were referred to as the tiger club nations, within a few decades they will be in the top ten economies in the world. Indonesia today is about number 22 in

the world. It has plans that by 2030 to be number four. Southeast Asian nations are experiencing economic growth and will, in time, see a more even spread in national wealth. They can be described as having a small fabulously wealthy elite, and vast numbers of desperately poor, but that is changing rapidly.

Another growth driver is relatively low production costs. Equipment is some of the best available, and the cost of labour and forestry are meagre compared to every other market. Consumers are paying very little compared to western consumers for their tissue. It is an underlying reason for the equipment investment in the area.

The firms are producing with low input costs, but when they sell on the international market, they are selling in USD or Euro, and so their profits are perhaps much higher than other parts of the world.

At the same time, governments in the region are encouraging industrial investment. Unlike western producer nations, where governments take a macro view and hands-off role in industry development, Southeast Asian governments encourage more dynamic, controlled market economies.

In 2011 the SBY Indonesian government (Susilo Bambang Yudhoyono the 6th President of Indonesia) set out ambitious growth plans targeting a 300% increase in the volume of wood product production by 2030, with the government actively participating in the industry's growth.

The industry would have a further 10 million hectares of plantation forestry above 2010 levels. At the same time, with knowledge and experience gained in forestry techniques, there is an anticipated increase in the yield of wood fibre from the fast-growth plantation forests.

Fast-growth tree species in the region are perfect for manufacturing tissue papers. The short fibre makes for excellent soft, absorbent tissue products. Consumers generally hold a negative view of using recycled fibre in tissue, so the growth in plantation assets is critical to the success of the sector.

**MAJOR WESTERN ECONOMIES ARE STAGNANT OR IN DECLINE AT BEST, WORKERS ARE OLD, AND THE TRANSITION TO AN URBAN POPULATION OCCURRED SOME TIME AGO. MANY WESTERN POPULATIONS ARE SHRINKING, AND SO AN AGEING COHORT OF CUSTOMERS IS A CAUSE FOR CONCERN.**

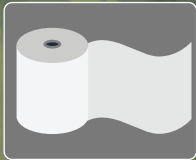




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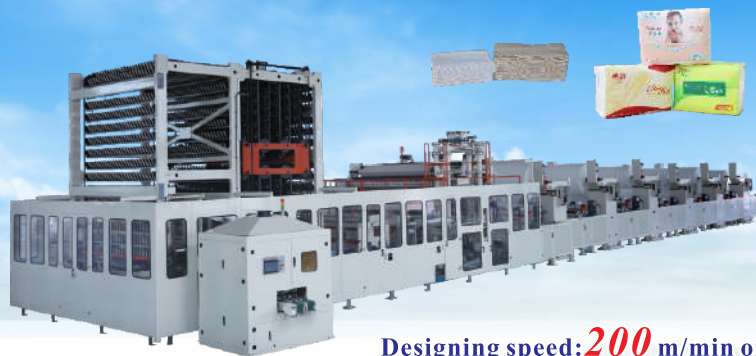
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Current world trade tensions have not dramatically impacted producers so far, and perhaps it is likely they will escape any significant fallout. Most of their trade is intra-Asia. Therefore, it is unlikely that these countries will be impacted by the US-China dispute, or the Brexit issue in Europe, in fact, if anything they will benefit, at least in the short term.

In the event of a global downturn, of course, all nations will experience some downward pressure.

It should be noted that historically Southeast Asian countries generally recovered comparatively quickly from international economic dips. It is because of the underlying demand from a very young age range of their population.

The next decade will likely see several new production sites. Most countries will continue to achieve real GDP growth of about 5 to 7%. The region's central banks are only just responding to global trends on lower interest rates, mostly around 5.5% but shifting down slightly from mid-2019 or late-2018.

The countries in the region all have much higher interest rates than North America or Europe. Inflation is generally around 3 to 5%. The often-used phrase that this will be the Asian Century is perhaps more real today than it was at the start of the century.

The global economy is set to have an extended period of low, near no growth, perhaps for more than another decade. It is hard to imagine what economic silver bullet exists that is going to spark businesses into robust action. It would seem that when an economy nears zero interest rates, it is hard to shift upwards, it is as if the wheels are stuck in thick mud. Now the trouble is there seems to be no end in sight to the mud in front of us.

The IMF releases updated projections regularly that re-adjusts global growth downwards each time. Only a month ago the projections dropped by almost 1%. Asian economies are well used to dealing

**THE NEXT DECADE WILL LIKELY SEE SEVERAL NEW PRODUCTION SITES. MOST COUNTRIES WILL CONTINUE TO ACHIEVE REAL GDP GROWTH OF ABOUT 5 TO 7%. THE REGION'S CENTRAL BANKS ARE ONLY JUST RESPONDING TO GLOBAL TRENDS ON LOWER INTEREST RATES, MOSTLY AROUND 5.5% BUT SHIFTING DOWN SLIGHTLY FROM MID-2019 OR LATE-2018. THE COUNTRIES IN THE REGION ALL HAVE MUCH HIGHER INTEREST RATES THAN NORTH AMERICA OR EUROPE.**

with long term market conditions, they are not trapped by short investment cycles. There are structural reasons for this situation, in particular, the Confucian family businesses that dominate trade in the region. These firms take an inter-generational view of business, knowing that not all the wealth is made in a single lifetime.

Many people will argue that the western style of capitalism has served us well, but that was in a time of higher rates. There is a great deal of academic brainpower now directed to exploring how capitalism will change to adapt to the new global business/political environment.

Perhaps there is a lot to learn from Southeast Asia, or maybe it is because they missed out on the mid-20th Century development period that now they can learn from the western economies' mistakes.

As a trading bloc, strong historic links between the eleven nations have proved and will prove to be a hedge against wider global trade uncertainties, and are becoming more significant than the trade done with Europe and North America. The long-range projections for the region will very likely hold up well against the international economic conditions.

If we cast our mind back to the Asian Financial Crisis in 1998/9, most Southeast Asian nations that were affected returned to 5% plus growth after a couple of years. After the 2008 financial crisis, much of the

western world is still suffering more than a decade later.

The global economy looms large for every nation. The world has never experienced, at least in modern times, such a low level of central bank interest since the GFC in 2008. Zero-interest rates are not uncommon for many countries; some even have negative rates.

Any likelihood of seeing higher interest rates or higher inflation in the developed economies is a long way off. There is simply no recognisable economic kick on the horizon. If anything, there are dark clouds such as Brexit, trade wars (at the time of writing) between China and the USA, unresolved Hong Kong tension, and the Middle Eastern crisis.

The market impact of all this is a damper on luxury goods, as consumers feel less confident. Tissue products from Southeast Asia are outstanding quality at a very competitive price, so fit into the conscious tightening of household budgets. It will also provide firms in the region a reason to explore installing additional capacity over the next few years, particularly if establishing adequate polycyclic plantation strategy can be achieved. Southeast Asia will become a more important global supplier, if not to Europe and North America, but to other future high growth markets such as North Africa and the Middle East, but most importantly, to itself.

**THE GLOBAL ECONOMY LOOMS LARGE FOR EVERY NATION. THE WORLD HAS NEVER EXPERIENCED, AT LEAST IN MODERN TIMES, SUCH A LOW LEVEL OF CENTRAL BANK INTEREST SINCE THE GFC IN 2008. ZERO-INTEREST RATES ARE NOT UNCOMMON FOR MANY COUNTRIES; SOME EVEN HAVE NEGATIVE RATES. ANY LIKELIHOOD OF SEEING HIGHER INTEREST RATES OR HIGHER INFLATION IN THE DEVELOPED ECONOMIES IS A LONG WAY OFF.**



# EVENTS CALENDAR

<b>3-5 MAR 2020</b>	PACK EXPO East	Philadelphia	<a href="http://www.packexpoeast.com">www.packexpoeast.com</a>
<b>9-11 MAR 2020</b>	European Conference	Lisbon	<a href="http://events.risiinfo.com/european-conference/">events.risiinfo.com/european-conference/</a>
<b>MAR 10, 2020</b>	PPI Awards	Lisbon	<a href="http://events.risiinfo.com/ppi-awards">events.risiinfo.com/ppi-awards</a>
<b>11 - 13 MAR 2020</b>	Tissue World Miami 2020	Miami	<a href="http://www.tissueworld.com/miami/">www.tissueworld.com/miami/</a>
<b>15-17 MAR 2020</b>	Paper2020	New York City	<a href="http://papermeets.com">papermeets.com</a>
<b>31 MAR - 3 APR 2020</b>	INDEX	Geneva,	<a href="http://www.edana.org">www.edana.org</a>
<b>26-29 APR 2020</b>	PaperCon 2020	Atlanta	<a href="http://papercon.org">papercon.org</a>
<b>26-27 MAY 2020</b>	PLMA International	Amsterdam	<a href="http://www.plmainternational.com/">www.plmainternational.com/</a>
<b>3 - 5 JUN 2020</b>	Asian Paper & TW 2020	Bangkok	<a href="http://www.tissueworld.com/bangkok/">www.tissueworld.com/bangkok/</a>
<b>14-16 JUN 2020</b>	International Pulp Week	Vancouver	<a href="http://internationalpulpweek.com/">internationalpulpweek.com/</a>
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<b>5-7 SEP 2020</b>	Paper Middle East	Cairo	<a href="http://www.papermideast.com/">www.papermideast.com/</a>
<b>9-11 SEP 2020</b>	Latam Paper	Mexico City	<a href="http://www.latampaper.com/">www.latampaper.com/</a>
<b>15-17 SEP 2020</b>	Tissue World Istanbul	Istanbul	<a href="http://www.tissueworld.com/istanbul">www.tissueworld.com/istanbul</a>
<b>15-17 SEP 2020</b>	Label Expo America	Rosemont	<a href="http://labelexpo-america.com/welcome-labelexpo-america">labelexpo-america.com/welcome-labelexpo-america</a>
<b>16-18 MAR 2021</b>	Tissue World Düsseldorf	Düsseldorf	<a href="http://www.tissueworld.com/dusseldorf">www.tissueworld.com/dusseldorf</a>
<b>21-24 SEP 2021</b>	Label Expo Europe	Brussels	<a href="http://www.labelexpo-europe.com/labelexpo-europe">www.labelexpo-europe.com/labelexpo-europe</a>
<b>27-29 APR 2021</b>	Pulpaper 2021	Helsinki	<a href="http://pulpaper.messukeskus.com/">pulpaper.messukeskus.com/</a>



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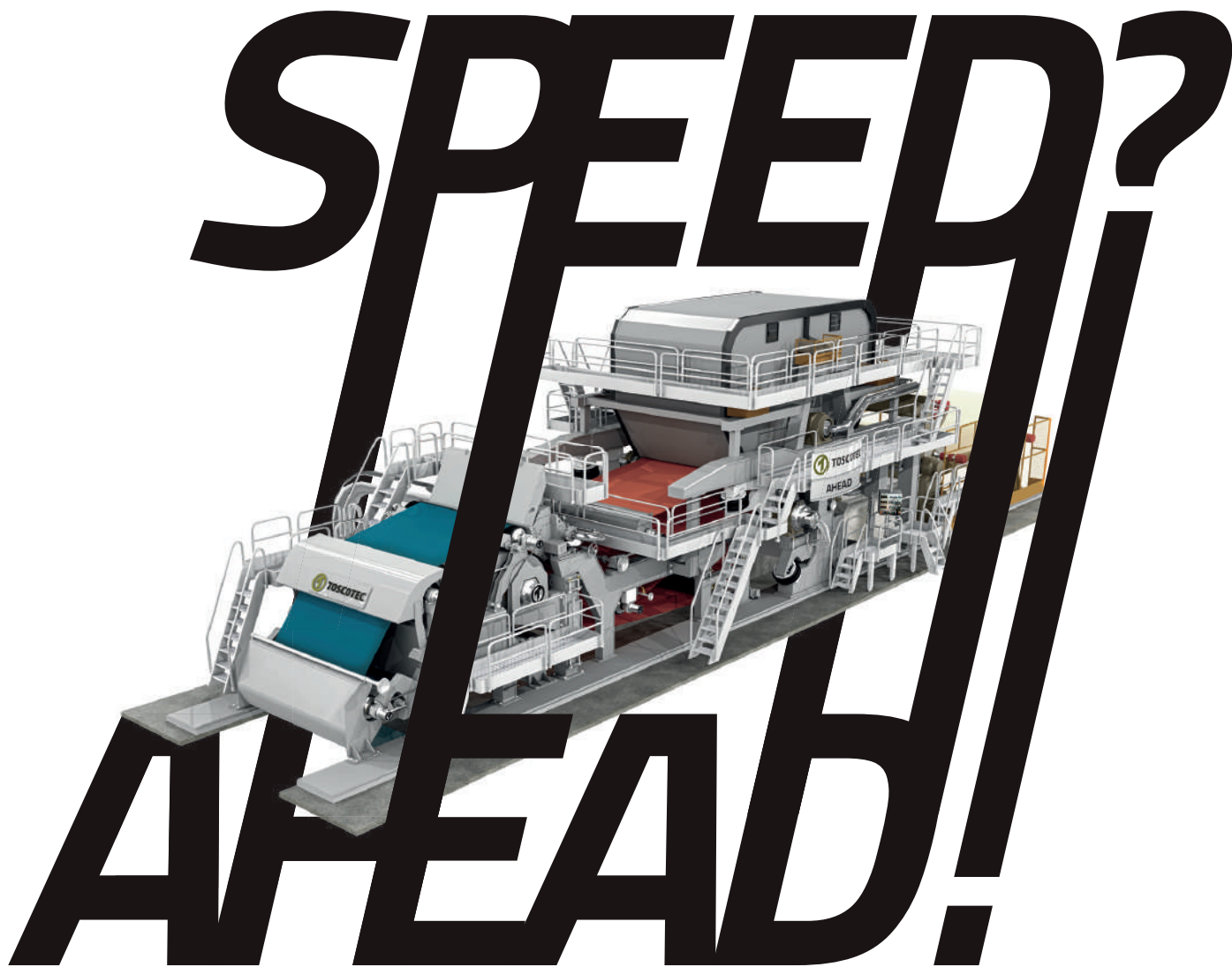
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