The North American Tissue Market
New Challenges in a Dynamic Environment

RISI Tissue Seminar
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Topics of the Day

• Can there be further growth in this relatively mature market?
• Battle between brands and private labels – who will win in the longer term and what can brand owners do to defend their position?
• New technologies – will there be place for new quality categories?
• Will nonwood pulps offer a realistic alternative for recovered paper whose supply is getting extremely scarce?
• New players emerging – will current consolidation be challenged?
• Will new investments result in a serious overcapacity?
• Is there a threat that even more foreign players will step into the North American tissue business?
CAN THERE BE GROWTH IN THIS RELATIVELY MATURE MARKET?
North American Tissue Business
Exceptionally Strong in 2015-2016

Strong economy helped the AfH sector growth, the first eight months of 2016 even stronger than in 2015

Average growth back on a 1.5% per year track
What Is Driving the Strong Demand?

• The strong economy has helped in many ways, with the AfH sector in particular benefitting and tissue imports show major growth.

• North American population continues to grow at a rate of 0.8-0.9% per year, contributing about half to the forecast long-term growth rate. Immigration has been a major force for population growth, but will this change if Donald Trump wins the presidential election?

• Product penetration seems to be continuing, despite already high penetration of many products. Recently, we have seen surprisingly good growth in some segments generally considered to be mature, such as facial tissue and napkins, but it looks like the use intensity has recently grown in these product groups.

• New product launches and heavy promotional campaigning by brand owners have had a push effect with more interest by buyers to upgrade, helping the volume to grow.
Growth Rates of US Tissue by Main Consumption Component, 2015

Strong growth in tissue imports, particularly in converted products but also in parent reels, net imports increased by 21% or 54,000 tonnes in 2015. This growth trend has also continued in 2016.

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<th>Growth Rate, Percent from 2014</th>
<th>PR Prod.</th>
<th>AH CP Shipm.</th>
<th>AtH CP Shipm.</th>
<th>Total Imports</th>
<th>Total Exports</th>
<th>Total Cons.</th>
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<tr>
<td>PR = Parent Reel</td>
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<td>CP = Converted Products</td>
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US Tissue Imports Growth, 2008-2015

Canada continues to be the main US import source for tissue, but China has taken the second position ahead of Mexico and Indonesia.
Main US Tissue Import Sources
Relative Shares of Total Imports, 2015

Parent Rolls
- Canada: 41.2%
- Mexico: 21.9%
- Indon.: 23.8%
- Italy: 2.6%
- Germany: 1.9%
- China: 3.2%
- Others: 5.3%

Converted Products
- China: 44.1%
- Mexico: 9.8%
- Canada: 40.8%
- Taiwan: 0.5%
- Colombia: 0.5%
- Indon.: 1.8%
- All Others: 2.5%

Total Imports: 340,400 Tonnes
Total Imports: 542,000 Tonnes
What Is Driving the Strong AfH Demand?

- Major decline in gasoline prices
  - Prices were down by 30-40% from 2014 to 2015-2016. This has boosted traveling, eating out, etc. People are simply moving more than before and this has helped AfH demand.
- The HoReCa sector is booming
  - Hotel occupancy rates continue to move upward and more than forecast. Restaurant sales also continue to develop positively.
- Unemployment continues to decrease and new employment generation has shown a positive trend, meaning more people are at work in offices, factories, service industries, etc., which has a direct effect on AfH tissue demand.
- There has been a greater increase in converted tissue product imports for the AfH sector than the AH sector, also contributing to the boom.
- New product launches (partly with new technologies) have had a push effect. with more interest by buyers to upgrade, helping the volume to grow.
Growth Rates in US Tissue Consumption by Sector and Product Category, 2015

The AfH sector recorded higher growth rates than the AH sector in all product categories, with bath and facial tissues benefitting from increased traveling and the booming HoReCa segment in particular.

Relative Growth

- Av. growth 1.7%/a
- Av. growth 3.1%/a
- +15% !
BATTLE BETWEEN BRANDS AND PRIVATE LABELS – WHO WILL WIN?
HOW CAN BRAND OWNERS DEFEND THEIR POSITIONS?
Retailer Labels Down in Canada, PL Share Recently Stabilizing in the USA

Major fight going on between private labels and brands in the USA, with brand owners increasingly using special price promotions, while in Canada brands continue to rebound through "half-price" actions.

Private labels (PL) have gained their largest share in napkins, where the dominance of the largest companies is weaker and table-top specialists play a major role; major growth also in towels, but PL share stagnated in 2015 due to major promotional activities by brand owners.
Expected Growth in US Tissue Consumption by Business Sector

Away-from-Home retailer labels will show strong growth of about 520,000 tonnes in 2010-2018, while At-Home branded volume growth will remain moderate (0.3% per year).

Market Volume

- Growth of 5.2% per year for Retailer Labels
- Growth of 1.9% per year for At-Home (AfH)
- Minor Growth for Away-from-Home (AH Brands)
NEW TECHNOLOGIES – WILL THERE BE PLACE FOR NEW QUALITY CATEGORIES?
New Technologies – Will They Challenge Conventional and TAD Tissue-Making?

• The main question is how that new technologies or structured and textured tissue making find place in the tightly competed tissue market?
• The first structured tissue products came on the market in Canada after Cascades rebuilt its PM2 at Candiac, Quebec for the new grade in late 2010, now for about six years ago and these products are available both in the At-Home and AfH sectors.
• The first new PM with ATMOS technology was installed by Wausau Paper in late 2012 and the new DublNature and Artisan towel brands with Green Seal as premium towel product in the AfH sector to A-class office buildings, high-end lodging establishments and health care facilities. SCA responded by launching its Tork Advanced towels, a hybrid product partly based on ATMOS rolls imported from Europe. Now Wausau has been consolidated with SCA.
New Technologies – Will They Challenge Conventional and TAD Tissue Making?

• Orchids Paper is the first company selling new NTT technology-based AH bathroom tissue produced by its cooperation partner Papelera San Francisco in Mexico on the US West Coast market. There has been some success, but so far the new grade is a niche product rather than a major breakthrough.

• The first US NTT PM has recently been in the started up at von Drehle's new Natchez mill in Mississippi, targeting the AfH sector. We do not have detailed information yet about new product success and it is too early to make any conclusions.

• In 2017, Orchids Paper will get a new NTT PM for its new Barnwell mill in South Carolina, and Resolute Forest Products will install a double-sized NTT PM at its Calhoun mill in Tennessee; both mills focus on the US AH PL sector.

• New technologies will challenge the conventional technology but it looks like TAD will remain the top quality, in the AfH sector there may be more opportunities than in the AH sector.
WILL NON-WOOD PULPS OFFER A REALISTIC ALTERNATIVE TO RECOVERED PAPER?
Nonwood or Fibers from Annual Plants: Which Fibers Could Be Considered?

• Bamboo has been one of the main alternative fibers discussed and some companies have made trials with this raw material. However, in North America, many issues remain open, including:
  ▪ Who will invest in the land needed for plantations?
  ▪ How good is the soil and which grades of bamboo suitable?
  ▪ Who would be cooking the raw material into pulp?

• Straw pulp based on agricultural waste from wheat and corn farmers is now mainly burned; this seems currently to be the most interesting opportunity, although questions remain.

• Pulps based other annual plants:
  ▪ Bagasse from sugar canes not available in the amount needed
  ▪ Efforts with kenaf, elephant grass and similar plants have been made, but no real success due to costs and availability
Nonwood or Plant Fibers: A Major Future Raw Material Alternative or Not?

• Kimberly-Clark has been a pioneer in this area and launched its plant fiber AfH tissue products under the sub-brand GreenHarvest, which contains 20% nonwood, or as K-C says, plant fibers, namely wheat straw and some bamboo pulp, replacing either wood pulp or recycled fiber. One of the main aims may be an improvement in the company's green image.

• Shandong Tranlin of China (now Vastly) surprised everybody with its $2 billion straw pulp project in Virginia, with the tissue sector the most likely target. However, the project is advancing slowly, currently in the permitting phase. One issue is also how much wheat and corn stalks will be available for major industrial production as Virginia is not a key region for growing wheat in the USA.

• At least two other straw pulp mill projects exist, Columbia Pulp in Washington and Prairie Pulp and Paper in Canada, both of which are closer to major wheat growing areas.
Nonwood or Plant Fibers: A Major Future Raw Material Alternative or Not?

• Niche companies such as NatureZway have launched nonwood pulp-based products based on bamboo pulp or straw and imported them from China; they are a very small fraction of the market, but still part of the increase in converted product imports.

• Until this point, trials have shown some market interest, but volumes are still very small, and it is difficult to forecast whether this will be the way the market goes or not; it will surely not be a very quick move.

• Currently, it looks like straw pulp could be the most attractive alternative, but many questions still remain, including:
  ▪ Will customers accept unbleached tissue instead of white?
  ▪ Will the cost of straw pulp remain in the range of RCF?
  ▪ What are the limitations for speed on tissue PMs? In China straw pulp-based tissue mills typically operate their PMs at speeds not exceeding 1,000 m/min. Could this be changed?
NEW PLAYERS EMERGING – WILL CURRENT CONSOLIDATION BE CHALLENGED?
Capacity Shares of the Main North American Suppliers, June 2016

Total Tissue Capacity: 9.0 Million Tonnes (June 2016)
Resolute Forest Products a New Player

- Resolute Forest Products, a graphic paper specialist, announced its entry into the tissue business in June 2015 by building a new tissue base paper and integrated converting facility at its Calhoun mill, Tennessee. Reportedly, the company was first considering a Canadian location for this move, but decided for the US mill, probably for logistical reasons.

- The company followed this with the announcement of the order of a new technology with NTT textured papermaking from Valmet, which was slightly surprising as a new player with new technology normally means a major challenge to manage. The new PM should become operational in Q1 2017.

- Resolute Forest Products also selected one of the top technologies for its converting facilities. Futura's Andromeda line is one of the very latest technological advances in the area of tissue roll converting. The total investment cost of an announced $270 million indicates that the company has decided for very serious approach with the best possible papermaking and converting technologies available.

- In November 2015, the company announced the acquisition of Atlas Paper from a Peak Rock Capital affiliate for $156 million. Atlas Paper operates two tissue mills with three PMs with an annual capacity of 65,000 short tons and 14 tissue converting lines. For Resolute, this investment brought it closer to the new business and added tissue experience to the management.
APP Now Established as US Producer

- APP is growing fast through its converting companies Mercury Paper/Oasis Brands (At-Home) in Strasburg, Virginia, and Solaris Paper in Santa Fe Springs, California (AH + AfH). The total converting capacity of these two plants is now about 130,000 short tons per year.

- The company claims its Fiora consumer tissue brand is the fastest growing brand in the US market, and A.C. Nielsen statistics confirm this, although it is still small compared to the leading brands but about the same size as White Cloud manufactured by Kruger for Wal-Mart. About 80% of recent growth has been in the brand Fiora and 20% in private labels. Fiora can be found, for example, in retail outlets of Vons in California and BI-LO in the US Southeast (Georgia, South Carolina and North Carolina).

- Two new tissue PMs, both supplied by Andritz and each having a capacity of about 63,000 metric tons, are now on line at the St. Croix Tissue mill in Baileyville, Maine. Hardwood pulp from APP's nearby Woodland Pulp mill is the main raw material.

- Mercury Paper has recently mainly sourced its parent reels from Indonesia, but after the Maine mill start-up, at least part, if not all, of Mercury's base paper needs will come from Baileyville. The company says parent reels will be available to third parties as well.
Sofidel on a Strong Expansion Path

- Sofidel began its foray into the US market in mid-2012 by acquiring Cellynne Holdings with one mill in Haines City, Florida, with two PMs and approximately 70,000 tonnes of tissue capacity, plus two additional converting plants in Green Bay, Wisconsin, and Henderson, Nevada. Total converting capacity was about 90,000 tonnes per year at that time. This deal was a major surprise to industry spectators, including me. Sofidel began to plan expansions immediately after the deal and purchased additional land next to the Florida mill and established converting in Tulsa, Oklahoma.

- In November 2015, the company announced the acquisition of the Green Bay Converting plants in Wisconsin and Hattiesburg, Mississippi, adding about 65,000 tonnes to its converting capacity. At the same time, a new mill plan for Circleville, Ohio, was released and company headquarters moved to Philadelphia.

- The greenfield mill in Ohio is designed to house four large tissue PMs plus integrated converting and logistic facilities. Sofidel has reportedly ordered several new converting lines, some of which have recently started up. There is no confirmation, but we expect at least one new PM will be soon be built in Ohio, and likely one to feed the Tulsa, Oklahoma, converting plant with three major lines operating somewhere in the neighborhood, and probably also one for Haines City, Florida. However, time schedules are not known.

- Sofidel is now concentrating on the retailer label business in the USA, but we cannot exclude the Regina brand launch, as this may be needed for growth.
Vastly/Tranlin of China with Huge Plan

• The integrated straw pulp/tissue plant plan of the Chinese producer has already been mentioned, but this plan is still under development and most likely somewhat delayed, although company representatives in the USA deny any delay.

• The mill site will cover about 850 acres of land area, but only a small part of this has so far been purchased. It appears that the time schedule will not be very quick, as reportedly part of the land area includes wetlands, which means more effort and time to organize the mill site to fit with both production and environmental requirements. The time plan was originally set for full operation in 2020, and this has not changed, says the company, but in any case the move will be long term rather than short term.

• However, the company is not waiting until its pulp mill is ready and announced it expects to begin with tissue converting in Virginia in 2018 based on straw pulp-based tissue parent reels imported from China. The company is active in Shandong with nonwood tissue products and is also building new straw pulp and tissue capacity in northeast China which should become operational soon. Converting Chinese reels and selling them in the USA can be seen as test marketing how the product will be received before building PMs.

• The Tranlin product, based on samples from China, is unbleached and beige in color; the softness is not bad but is also not comparable with the best products. It will be interesting to see how this project fares.
WILL NEW INVESTMENTS RESULT IN A SERIOUS OVERCAPACITY?
Major Tissue Capacity Changes* in North America, 2015-2016

2015
- Double Tree Paper/Royal Paper, Gila Bend, AZ, USA 29,000 t/a
- Orchids Paper, Pryor, OK, USA 27,000 t/a
- Nippon Paper Industries USA Co., Port Angeles, WA 18,000 t/a
- Lincoln Paper & Tissue, Lincoln, ME, USA -69,000 t/a

2016
- First Quality Tissue, Anderson, SC (new TAD PM) 64,000 t/a
- Von Drehle Corp., Natchez, MS, USA (NTT PM) 32,000 t/a
- St. Croix Tissue (APP), Baileyville, ME, USA 126,000 t/a
  222,000 t/a

* Metric tons
## Major Tissue Capacity Changes* in North America, 2017-2019

**2017-2019**

- Orchids Paper Products, Barnwell, SC, USA (NTT PM) 32,000 t/a
- Resolute Forest Products, Calhoun, TN, USA (NTT PM) 60,000 t/a
- Confidential, USA ??? 64,000 t/a
- Kruger Products, Crabtree, QC, Canada 20,000 t/a
- First Quality Tissue, Anderson, SC, USA (ATMOS PM) ??? 68,000 t/a
- Little Rapids Corporation, Shawano, WI, USA (replacement) 10,000 t/a
- ST Tissue, Franklin, VA, USA 45,000 t/a
- First Quality Tissue, Lock Haven, PA, USA (TAD PM) 64,000 t/a
- 363,000 t/a

**Potential Projects**

- Kruger Tissue, Memphis, TN or Canada (TAD PM) 60,000 t/a
- Sofidel North America, Circleville, OH, USA (NTT?) 65,000 t/a
- Sofidel North America, Oklahoma or Florida, USA 65,000 t/a
- Procter & Gamble, Box Elder, UT, USA (TAD PM) 72,000 t/a
- 262,000 t/a

* Metric tons
Net Capacity Change* and Tissue Capacity Utilization in North America

This year is looking good as some projects have been delayed, but any new expansion for 2017 or 2018 adding to the committed capacity would change the current outlook from stable to negative; potential closures could help.

*A lot of new capacity coming on stream that will effect 2017-2018; utilization rate will head south if no further closures occur

*Based on committed projects only
COULD EVEN MORE FOREIGN PLAYERS TARGET THE NORTH AMERICAN TISSUE BUSINESS?
North American Tissue Market Is an Attractive Target

• SCA was the first company from Europe to have a major acquisition, and it has established its position through further purchases and organic growth in the AfH sector. We cannot exclude something coming on in the longer term, as the company is not (yet) active in the At-Home tissue business in North America.

• Sofidel was the second European company with a major interest in the North American tissue business. It currently operates in both the private label At-Home and the AfH segments. It has an ambitious expansion plans.

• From Asia, APP is now running a tissue mill in the USA after years of converting operations and there are rumors that more projects will follow. Several Chinese companies sell tissue in the USA and some of them, such as Lee & Man, have considered investments. Tranlin's plans were already discussed.

• What could happen next? It would be no surprise if a Latin American tissue company targeted the USA (partly due to the strong US dollar).
Thank you for your attention!

For more information:

- **Outlook for World Tissue Business**
  - [www.risi.com/OWTB](http://www.risi.com/OWTB)

- **World Tissue Business Monitor**
  - [www.risi.com/WTBM](http://www.risi.com/WTBM)

- **US Tissue Monthly Data**
  - [www.risi.com/USTM](http://www.risi.com/USTM)

- **Recently Published Special Study**: Exploding Chinese Tissue Business – Opportunities and Challenges
  - [www.risi.com/chinatissue](http://www.risi.com/chinatissue)