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Surviving the Paper Trail

By Pat McCarthy, Director

Pulp and paper companies compete in a global marketplace and this highly competitive environment requires firms to be as efficient as possible in their supply chain logistics. What is supply chain logistics? From Collins online dictionary, a firm’s supply chain is the “channel of distribution, beginning with the supplier of materials or components, extending through a manufacturing process to the distributor and retailer, and ultimately to the consumer” (<http://dictionary.reference.com/>). Derived from the Greek meaning skilled in calculation, ‘logistics’ reflects the management of a firm’s supply chain, including the planning, coordination, and implementation of the myriad activities along the supply chain. For the pulp and paper sector, supply chain logistics encompasses the full scope of the paper trail, from forest resources downstream to the ultimate customer. Thus, an effective, efficient, and well-managed supply chain is critical to a firm’s profitability and to competing in a global market place. Two factors that are key to a firm’s abilities to manage its supply chains are transportation and the Internet. In this regard, the Bureau of the Census has recently released results from its 2012 Commodity Flow Survey and a 2013 E-commerce report.

Pulp and Paper - Commodity Flows in the US.

In 2012, firms in the United States shipped 11.3 billion tons of goods, valued at \$13.8 trillion. Considering both distance and amount shipped, all modes accounted for 2.9 trillion ton-miles. The pulp, newsprint, paper, and paperboard sector (SCTG Code 27) of the industry shipped 123.3 tons of paper (1.1% of the total), valued at \$126.8 billion (0.9% of the

total). This sector of the industry accounted for 2.3% of all ton-miles, with 69.1 billion ton-miles.¹

Reflecting more the packaging and converting side of the industry, the paper or paperboard articles sector (SCTG Code 27) of the industry shipped fewer tons (76.5 million) and fewer ton-miles (76.7 billion) but these commodities were valued more (\$126.3 trillion). Shipments in this sector also, on average, traveled longer distances, 634 miles (almost identical to the national average) relative to a much shorter 261-mile average distance in the pulp, newsprint, paper, and paperboard sector.

To put these numbers in perspective, the following table provides percentage changes between 2007 (just prior to the great recession), and 2012.

	<u>2012</u>	<u>2007</u>	<u>% Change</u>
Pulp, newsprint, paper, paperboard (SCTG 27)			
Value (million \$)	\$123.9	\$126.9	- 2.3
Tons (000)	123.3	145.4	-15.2
Ton-miles (million)	69.1	82.1	-15.8
Av. miles per shipment	261	297	-11.9
Paper or paperboard articles (SCTG 28)			
Value	\$126.3	\$118.1	6.9
Tons	76.5	82.2	- 6.9
Ton-miles	26.7	29.0	- 7.9
Av. miles per shipment	634	512	23.8

The percentage changes in the two pulp and paper categories reflect the effects of the great recession. Tons shipped and ton-miles in the mill-related sector

¹ SCTG is Standard Classification of Transported Goods.

fell 15% in this five-year period. But the effect was uneven between sector 27 and sector 28, the articles and packaging-related sector. In addition, average miles traveled in each sector changed significantly but the changes were in opposite directions, decreasing 11.9% in Sector 27 and increasing 23.8% in Sector 28. Notwithstanding the high level of aggregation, these shipment characteristics raise questions on the differential effects of the recession in industry sub-sectors and on ways that the industry may have changed between 2007 and 2012.

Pulp and Paper – E-commerce

One avenue is technology and e-commerce. Typically, discussions on pulp and paper focus on the demand side and how omnipresent electronic devices will ultimately be the death knell for paper. Of course, these predictions are wildly overstated yet there is no question that e-devices are changing people’s behaviors, the demand for some pulp and paper products, newsprint and newspapers being the most frequently cited example. There is generally less discussion, however, on the supply side of the market and the extent to which e-commerce has – or has not – affected pulp and paper business as usual.

Appealing once again to definitions, the Census Bureau uses the term e-commerce to describe on-line transactions whether conducted over open networks such as the Internet or on proprietary networks running

systems such as Electronic Data Interchange (EDI). Appropriately, e-revenues is the market value of e-commerce activities and e-shipments denotes the market value of e-commerce activity for commodities shipped from a plant.

Based on NAICS code 322 for Paper Manufacturing, the table below reports on pulp and paper e-commerce activities between 2007 and 2012. Whereas paper manufacturing grew a modest 2.8% over the 5-year period, the value of shipments from e-commerce grew 59.1%, an annual rate of 9.7%. But did this growth come from within the pulp and paper sector or from outside of it?

The bottom half of the table provides some insights on this. Merchant Wholesalers are wholesalers that take title to the goods that they sell (Census Bureau). From the table, we see that the total value of sales in this sector increased 54% in the five year period 2007 – 2012, representing a healthy 7.7% annual growth rate.

The last two rows in the table are even more telling. Driving the growth in e-commerce sales are those merchant wholesalers that are part of the manufacturers’ offices and branches. In this sub-sector sales grew at an annual rate of 21.7% (or 87% over the five year period) in contrast to a 2.8% annual growth in wholesaler merchant sales that are not part of manufacturer sales activities (30.9% total growth).

	<u>2012</u>	<u>2007</u>	<u>% Change</u>
Paper Manufacturing (NAICS 322)*			
Value of Shipments (million \$)	181.2	176.1	2.8
E-commerce shipments (million \$)	98.8	62.1	59.1
Merchant Wholesalers (NAICS 4241)			
Total E-commerce sales (million \$)	45.9	29.8	54.0
1. Manufacturers Sales Offices & Branches	22.9	17.5	30.9
2. Excluding Manufacturers Sales Offices & Branches	23.0	12.3	87.0

*Although based on the Commodity Flow Survey, shipment value for a SCTG category is not directly comparable to a NAICS classificatio

These statistics strongly suggest that during the 2007 – 2012 period the industry was rapidly adapting to and integrating these new e-commerce technologies into their supply chains. This rapid growth also implies that the industry sees these new technologies as critical to its bottom line and its ability to overcome all of the competitive challenges along the paper trail from resource origins to production to final destination.

For those interested in these two new reports, the web sites are:

Commodity Flow Survey:

<http://www.census.gov/econ/cfs/>

E-commerce:

<http://www.census.gov/econ/estats/2013/all2013tables.html>

Trend Indicators from Industry Intelligence Inc.

Industry Intelligence Inc. has provided market intelligence to more than 600 companies worldwide since it began as Forestweb in 1999. Industry Intelligence delivers a daily report featuring news of the paper and forest products industries. For your subscription visit: <http://www.industryintel.com>

Below is a sampling of recent Industry Intelligence headlines, chosen to mirror significant trends and other interesting developments in and around the paper and forest products industries.

Increasing shift in European paper capacity away from publication paper to investments in such areas as specialty papers, paper packaging, tissue and biogas driving rise in industry's profitability; more newsprint shutdowns likely: Moody's report

Companies that have diversified away from the mature European publication paper market and invested in new growth areas saw improved profitability in the first half of 2015, says Moody's Investors Service.

CMPC sees tissue segment in Latin America as key potential market, with growth in Brazil to 2022 forecast at 64% in paper and 34% in handkerchiefs, over current consumption of 5.7 kilos per person

In Uruguay CMPC has a 70% market share in tissue paper, but only 7% in Brazil.

Suzano's Q2 net income soars to 456M Brazilian reais from 97M reais a year ago, as sales increase 39.4% to 2.38B reais; Q2 pulp and paper shipments total 1.115 million tonnes, up 9.9% from Q2 2014,

while average prices jump 44.7% for pulp, 11.7% for paper

In part, this was due to robust demand for eucalyptus fiber in all regions.

Holmen's Q2 net profit increases to SEK322M from SEK250M a year ago, as sales rise 4.9% to SEK4.14B; Q2 saw launch of new SC paper, Holmen Uniq, produced by rebuilt newsprint machine in Braviken, Sweden, with aim to gradually switch to new product

The improvement in earnings was due to reduced costs and increased paperboard sales.

Columbia Pulp's plan to build straw pulp mill in Columbia County, Washington, progressing, with expectation that US\$100M bond from local authority will close in about a month, triggering start of activity at construction site, says company official

The project involves building a 140,000-ton/year pulp mill at the center of a dense wheat farming region. The company expects to get all of its feedstock from within 75 miles of the site. It has leased space to store 20,000-30,000 tons of wheat and began receiving the straw on Aug. 10.

Timber plantations could be making California's wildfires worse, say researchers, seeking solutions in higher mix of tree species, early thinning, removal of forest fuels and use of prescribed burns

The uniform and dense planting of pine trees is not helping matters in the drought-stricken state, and researchers believe alternative forest management practices could at least help limit the damage to plantations when a fire does strike.

Sierra Forest Products in Terra Bella, California, turns logs away after fire-salvage operations fill log decks; official says emergency and catastrophe in region's forests has reached such an extent that taking new contracts is out of the question

According to local loggers, many of the region's logs will end up being chipped for mulch if the situation continues.

Price of paper in India flat in past three years at about US\$191/tonne, forecast to rise 3% this year if production is not too high; increased cost for pulp in recent years, mills' distance from pulpwood supplies continue to hamper India's paper industry

Wood has to travel 300-400 km for papermaking whereas globally, mills are within 50-100 km from the wood source. Availability of recycled fibre is also inadequate considering the country's low recycling rate

at 20%. This favors the use of raw materials such as bagasse

Tissue and sanitary sectors account for 45% of global market pulp demand in 2014, up from 42% in 2012, while printing and writing sector demand falls to 32% from 34%, but growth and contraction changes vary by regions: Hawkins Wright study

Bleached kraft pulp shipments were 52.8 million tonnes in 2014, of which 23.7 million was softwood and 29.1 million hardwood. Eucalyptus accounted for over 130% of the growth in deliveries, more than offsetting significant declines in shipments of northern hardwoods. Tissue and sanitary now account for 45% of global demand (versus 42% in 2012), whilst the printing and writing sector consumes 32% (v 34% in 2012).

Resolute's Q2 net loss widens to US\$4M from year-ago US\$2M net loss, as sales drop 15.1% to US\$926M, based on preliminary results; Q2 transaction prices down US\$88M from year earlier, and newsprint, specialty paper shipments decline due to capacity cuts

Newsprint pricing conditions since late 2014 have reflected increasing challenges for North American producers, who face an accelerating pace of global structural decline and a currency disadvantage in export markets because of the strong U.S. dollar.

Mercer International's Q2 net income increases to US\$16.4M from US\$0.6M in year-ago period, with 11% decline in costs attributed to stronger US dollar; Q2 revenue drops 6.4% year-over-year to US\$266.9M, primarily due to lower pulp sales realizations

CEO David Gandossi said, "As our operating costs are primarily incurred in euros and Canadian dollars and our principal product, NBSK pulp, is quoted in U.S. dollars, our business and operating margins materially benefit from the strengthening of the U.S. dollar. Such benefit is generally partially offset as a strengthening of the U.S. dollar puts downward pressure on pulp prices, since a stronger U.S. dollar increases costs to our European and Asian customers. Our energy and chemical sales are made in local currencies and, as a result, our realizations decline in U.S. dollar terms when the U.S. dollar strengthens."

Domtar's Q2 net earnings slip to US\$38M from US\$40M a year earlier, while sales fall 5.4% to US\$1.31B, based on preliminary results; Q2 after-tax costs include US\$11M for impairment of property,

plant and equipment, US\$1M for closure and restructuring

Compared to the first quarter of 2015, manufactured paper shipments were down 2.6% and pulp shipments decreased 1.4%. The shipments-to-production ratio for paper was 97% in the second quarter of 2015, compared to 100% in the first quarter of 2015.

Rayonier Advanced Materials to spend US\$25M on strategic repositioning, including converting 190,000 tonnes/year cellulose specialties C-line at Jesup, Georgia, mill to produce 245,000 tonnes/year fluff and viscose pulps, lowering annual costs by US\$14M

Annual fluff and viscose production capacity will increase by approximately 11 percent.

Brazil's H1 pulp production and exports up from a year ago, with pulp output ahead by 3.5% and exports up 7.1%, while paper production was largely stable and exports gained by 3.9%; forest products industry's balance of trade up 6% from H1 2014: Ibá

In the first six months of 2015, revenue from exports of pulp, wood panels and paper totaled \$ 3.6 billion.

AF&PA applauds letter from 154 members of US House of Representatives supporting biomass energy, notes paper and wood products manufacturing sector is largest US industrial producer and user of bioenergy, which helps to keep nation's forest stocks stable

Commenting on the letter, CEO Donna Harman said, "The paper and wood products manufacturing industry is the largest producer and user of bioenergy of any U.S. industrial sector. Our industry's use of biomass residuals and commitments to forest planting and regrowth help to ensure that the nation's forest stocks are stable and rising. The natural carbon cycle should be recognized in EPA policies."

Industry-funded Change the Pallet group in Oregon claims corrugated pallets are 80% lighter than wood, cites benefits to Ikea such as fewer truck journeys, fuel and CO2 emission savings; wood advocates say corrugated pallets get soggy, are less strong

Corrugated pallets are said to be lighter and more compact than wood ones. However, a GM rep says that although the company uses corrugated pallets when it can there are cons, too. They have to be stored indoors so they don't get soggy and are sometimes not strong enough for heavier stuff.

Ohio-based Ranpak launches Geami WrapPak, an alternative to plastic bubble wrap, with UK-based Antalis Packaging to serve as distribution partner;

product is made from die cut kraft paper and tissue interleaf paper, features a 3-D honeycomb structure

The one-of-a-kind paper packaging solution eliminates the need for tape, while being a sustainable alternative to bubble wrap.

Fibria progressing in executing Horizonte 2 pulp mill expansion at its Tres Lagoas unit, in Mato Grosso do Sul, Brazil, scheduled to start up in Q4 2017; contracts negotiated for various parts of project, with latest being with Andritz

After the expansion, whose startup is expected in the fourth quarter of 2017, the Mato Grosso do Sul unit will reach full annual production capacity of 3.05 million tons of pulp. The Horizonte 2 Project not only generates and consumes its own energy, but will also generate surplus power of 120 MWh, which will contribute to Brazil's energy matrix.

Global paper packaging materials market forecast to grow at 4.4% CAGR during 2013-2019, to reach US\$344.43B in 2019; in 2012, world demand for paper packaging was valued at US\$254.80B and totaled 181.48 billion tonnes in volume terms: report

Bans on the usage of lightweight plastic bags and rising awareness of ecological issues are expected to boost the demand for paper packaging and paper packaging materials. A report published by Transparency Market Research predicts robust growth.

Oji Holdings decides to permanently shut down 44,000 tonnes/year PM No. 7 at its Tomioka mill in Japan, indicating move is in line with its plan to build optimum manufacturing system that responds to demand changes for printing and communications papers

"Changes in demand structure of printing and communications paper" is a nice way of putting it. – Ed.

IP awarded NY state grant of up to US\$1M for portion of costs to convert oil-fired boilers to use natural gas, at company's pulp and paper mill in Ticonderoga; project will reduce mill's operating costs, improve energy efficiency, reduce oil consumption

The project is said to be consistent with the state's strategies to support manufacturing and existing employers, and encourage sustainable business activities.

IP APPM's net profit nearly doubles for quarter ended June 30, increasing to 80.3M rupees from

41.7M rupees in year-ago period, while total income rises 4.9% to 2.99B rupees

According to the company's web site, "International Paper APPM Ltd. (formerly known as The Andhra Pradesh Paper Mills Ltd.), is one of the largest integrated paper and pulp manufacturers in India. Established in 1964, the company produces writing, printing and copier papers for foreign and domestic markets." Total production, including recycled, is said to be 240,000 tonnes per year.

AF&PA Statistics

Since our last reporting of American Forest and Paper Association statistics releases, the Association has issued its July paperboard, kraft and containerboard reports.

Paperboard

Total boxboard production decreased 2.8 percent when compared to July 2014, but increased 2.7 percent from June. Unbleached kraft boxboard production increased over the same month last year and increased compared to June. Total solid bleached boxboard and liner production decreased when compared to July 2014, but increased compared to June. The production of recycled boxboard was flat compared to July 2014, and increased when compared to June.

Kraft

Total kraft paper shipments were 147.2 thousand short tons, 9.4 percent higher than in July 2014. Bleached kraft paper shipments decreased from 10.9 thousand short tons in June 2015 to 8.6, while unbleached kraft paper remained essentially flat at 138.6 thousand short tons. Overall, year-to-date shipments up through July 2015 were 1.0 percent higher compared to the same period in 2014. Total month-end inventories increased to 77.4 thousand short tons.

Containerboard

Containerboard production was 1.8 percent higher compared to July of last year. The month-over-month average daily production compared to June 2015 was 0.2 percent lower. The containerboard operating rate for July decreased to 96.3 percent from June's 97.5 percent.

Purchase the full reports by contacting Caroline Nealon, Statistics_Publications@afandpa.org or 202-463-2448.

Paper Quotes

“I like the process of pencil and paper as opposed to a machine. I think the writing is better when it's done in handwriting.” – *Nelson DeMille*

“..... is the country where the money falls apart and you can't tear the toilet paper.” – *Billy Wilder*

“Computers may save time but they sure waste a lot of paper. About 98 percent of everything printed out by a computer is garbage that no one ever reads.” – *Andy Rooney*

Statistics Corner: Mill Employment

The figure below shows how total employment by US pulp, paper and paperboard mills has declined since the beginning of 2007. The sharp decline associated with the recession has abated somewhat, although job losses continue. The slight May-June 2015 uptick is probably not an indicator of impending improvement. May-June increases are seasonal and common, having occurred in most earlier years. ■

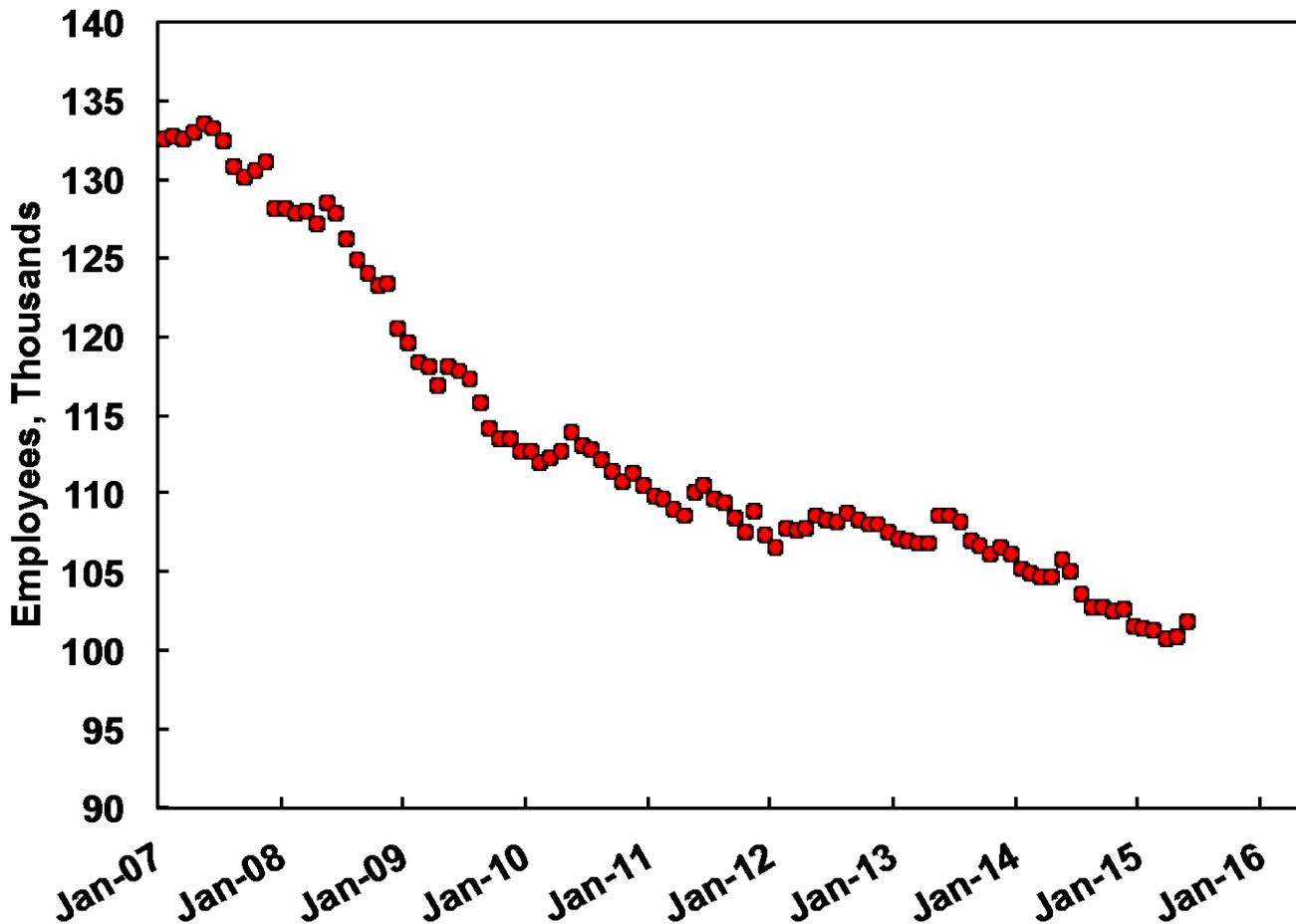


Figure 1. Employment by US Pulp, Paper and Paperboard Mills

(Source: Bureau of Labor Statistics)