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## ***New Report Examines Industry Opportunities, Challenges***

A report recently released by PricewaterhouseCoopers LLP presents an insightful survey of new values and new directions in the forest, paper and packaging industries. Several key factors will shape the sector's direction over the next two decades, including technology, competition for fiber, changing industry structures and regulation. The following is a brief overview of the key issues, based on the report's executive summary.

**Technology:** Despite the threats posed by the Internet, e-mail, electronic invoicing and e-book readers, advances in technology will open up a whole range of new uses for paper, paper packaging, and fiber itself. Embedded sensors will open up more specialized uses for paper. Improved production techniques will impact the cost effectiveness of bioproducts and biofuel, and if costs come down, demand for fiber for these uses will go up accordingly. Technology also has the potential to increase both forest yields and production efficiency all across the value chain. The authors believe that technology will impact demand trends more dramatically and quickly; the supply side is expected to change more slowly.

**Competition for Fiber:** Although demand for many types of paper will decline, demand for other uses for fiber will grow, perhaps explosively. It is likely that demand will outpace supply and that increasing competition for fiber will dramatically affect future supply chains. The trend towards more sustainable products will make forest resources increasingly valuable. At the same time, it will become more difficult to find the appropriate balance between production and conservation as forests become increasingly valued for their vital role in the planet's ecology. There are limits to the amount of natural forest that can be sustainably managed and to the amount of land that is suitable for planting new forests. There will be competition from other land uses like

agriculture as the world's population increases. Yields can be improved, but not indefinitely. The supply of sustainably grown and harvested fiber will have natural limits, even if genetic modification techniques become widely used. It is likely that companies from a diverse array of industries – energy, utilities, chemicals and potentially many more as biomaterials evolve – will compete with our industry for control of forests, or at least access to their fiber, and the best economic use of the resources they provide. There will continue to be important regional differences. Demand for paper in China and India will continue to increase. New methods of accessing available fiber may emerge in response to the growing pressures. International fiber exchanges and the emergence of a new biomass aggregation industry are two possibilities, but there may be others.

**Evolving Industry Structures and Value Chains:** As uses for forest resources evolve, we will see new entrants into the value chain. Companies in industries like chemicals and energy will want to secure wood fiber for their own applications, changing the nature of competition, and indeed the structure of the industry. Working across industry boundaries will be increasingly important. There will be a wide range of potential collaborations for paper and other forest products companies seeking partnerships with these new market players. As one example, a partner who already has a distribution network for biofuels might make setting up a biorefinery more cost effective. There is also potential for collaboration in traditional markets. Companies seeking to create more sustainable packaging solutions may benefit from working together with plastics producers to create innovative, lightweight, durable new products. Paper manufacturers may need to work together with electronics companies and logistics operators to develop the next generation of high tech labels.

**Changing Regulation:** Regulation can be expected to increase as the vital importance of renewable forest

resources commands the attention of regulators. Forests will become more valued for their carbon, climate regulation and broad ecosystem benefits, than for an alternative use of the land. Regulation can provide support for direct public sector subsidies, but regulation can also cause distortions, for example by favoring one use of fiber at the expense of another, often without considering all relevant economic and environmental implications. A current example is energy wood in Europe.

In general, existing policy is not sufficiently consistent across either geographic or sector boundaries. International efforts to agree on globally applicable regulation are notoriously difficult to achieve; there is an urgent need for industry to take the lead, rather than wait for political agreement. There is also a need for a broader consensus among different, competing industry groups as to how to divide up the world's fiber resources, perhaps via trade organizations working multinationally. Companies should document and publicize the impact of biodiversity and similar projects and share their own life cycle analyses concerning the sustainability credentials of wood and fiber-based products in order to broaden awareness of their contributions to a more sustainable economy. The industry's voluntary forest certification efforts already show that sector initiatives – basically self-regulation – can make a big impact.

The full text of the report is available at:

[http://www.pwc.com/en\\_GX/gx/forest-paper-packaging/publications/pdf/growing-future-new-version.pdf](http://www.pwc.com/en_GX/gx/forest-paper-packaging/publications/pdf/growing-future-new-version.pdf)

## **Recent Forestweb/Industry Intelligence Headlines**

Forestweb and its sister company, Industry Intelligence, publish weekly news reports tracking recent developments in and around the paper and forest products industries. Subscription information is at <http://www.forestweb.com/Corporate/index.cfm>

Below is a small sampling of recent headlines, together with brief synopses.

### **April 24**

*Patriarch Partners to purchase closed Gorham, New Hampshire, paper mill from Counsel RB Capital, plans to produce tissue at site*

The Gorham mill, formerly owned by Fraser Papers Inc. produced 80,000 tons of uncoated freesheet papers and 37,000 tons of towel products during 2009.

*KiOR chooses contractor to build biomass-to-renewable crude plant in Columbus, Missouri; project will process about 500 tons/day of wood biomass, produce over 11 million gallons of fuel/year*

The unit will be based on the design and construction of traditional fluid catalytic cracking units.

*Chilean pulp and paper producer Empresas CMPC to invest over US\$600M to expand pulp capacity by 21% at its Santa Fe II mill, by 42% at Laja mill, and boost production of tissue paper, corrugated boxes at other units*

The company will expand pulp production at its Santa Fe II plant to 1.14 million tons/year from 940,000 tons by the end of 2011. It is also planning to ramp up capacity to 370,000 tons/year from 260,000 tons at the Laja mill, and to expand tissue paper and corrugated box capacity at other, unnamed units.

### **April 17**

*Former UPM paper mill in Kajaani, Finland, to be converted to house country's fastest supercomputer; idled paper mills viewed as 'the best possible server rooms'*

The carbon footprint is small; electricity comes from a local power plant, which partly operates on wood chips and cooling water for the computers comes from the Kajaani River.

*Wausau Paper approves US\$220M expansion of towel, tissue production; will install Voith ATMOS technology paper machine at Harrodsburg, Kentucky, converting facility that will produce 75,000 tons/year from 100% recycled fiber*

This is in response to growing demand for “green” products.

### **April 10**

*U.S. biomass power development grows nearly 20% in past six months to 49 proposed projects, including 10 coal-to-biomass conversions, report finds; California leads with 22 projects, followed by Florida, New York*  
Projects that were proposed and are now under construction have increased from three to six in the past six months.

*Sun Paper to convert standard bleached chemical pulp line in Yanzhou City, Shandong Province, China to 650 tonnes/day dissolving pulp line, orders screening and cleaning systems from Noss for start-up September 2011*

The order reflects very strict requirements on dissolving pulp cleanliness.

*Shandong Sun Paper to build pulp mill in Laos or China to produce 950 tonnes/day of dissolving pulp or 1,400 tonnes/day of bleached chemical pulp, orders*

screening and cleaning system from Noss for startup August 2012

Noss AB, a Swedish company, will supply the system.

### April 3

RWE Innogy's subsidiary Georgia Biomass to open 750,000-ton/year wood pellet plant near Waycross, Georgia, early this summer

Wood pellets are used as a substitute for coal, primarily in Europe. The plant will provide 80 jobs and will provide a market for pine trees grown in the area.

Western Forest Products' Alberni Pacific Division on Vancouver Island, British Columbia, restarts after five-day shutdown caused by log shortage; other affected mills are Somass, Ladysmith and Cowichan

Bad weather on the north end of the island has restricted logging. Since the 2008 economic downturn, companies have kept their inventories of logs much lower. As a result, even short-duration weather events can disrupt production.

### March 27

GP to cut back operations, lay off up to 30 workers at 600-employee Dixie Cup plant in Darlington, South Carolina, as sales fall for paper cups

One of the main reasons for the decline in paper cup sales is that the fast-food industry offers beverages in plastic cups or

bottles rather than paper cups. Demand for paper plates has not declined the same way.

Arauco, Stora Enso JV Montes del Plata awards Pöyry EPCM, project management, engineering contracts for 1.3 million tonnes/year greenfield pulp mill in Punta Pereira, Uruguay, targeted to start up in H1 2013

Montes del Plata is an equal share joint venture company between Arauco and Stora Enso.

## Statistics Corner: Industry Financial Performance

One indicator of a firm's financial performance is the return on capital employed (ROCE). Many analysts expect (and major oil and gas companies routinely achieve) ROCE levels of 10-12%. This is in contrast to the much lower levels being reported by companies in the forest, paper and packaging (FPP) industries. Figure 1 below shows that the top 100 FPP companies (according to PricewaterhouseCoopers) in 2009 achieved, on the average, an ROCE of 2.7%. It also shows a generally downward trend over the period 1999 – 2009.

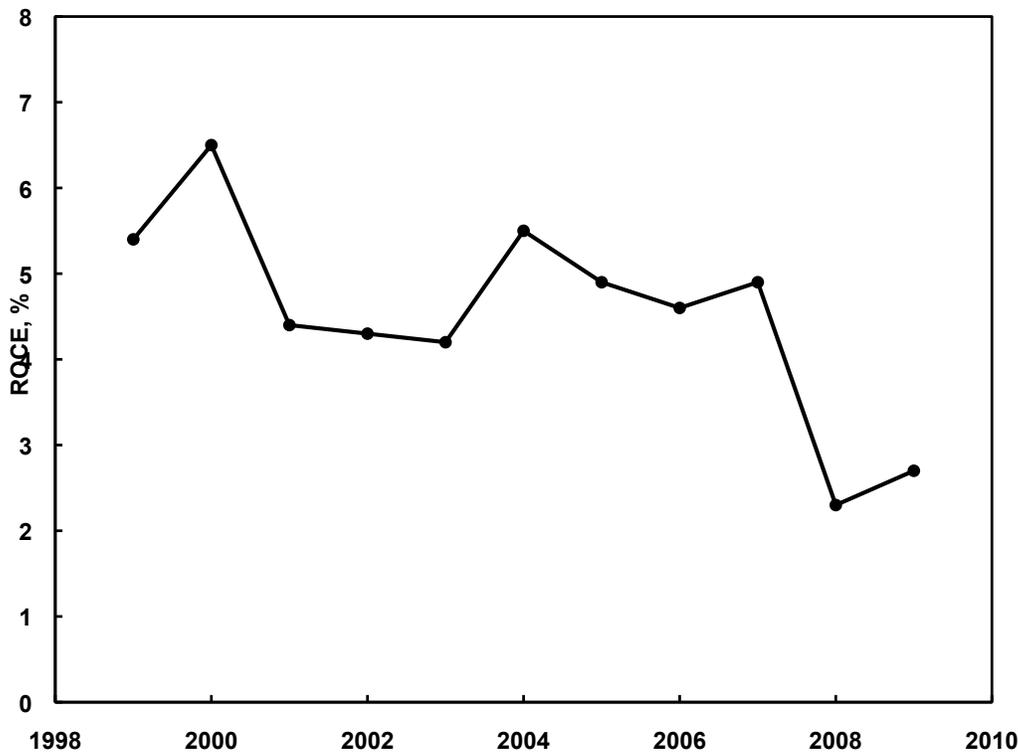


Figure 1. Return on capital employed for top 100 forest, paper and packaging companies (Source: PricewaterhouseCoopers)