State of the North American Pulp & Paper Industry
– An Update & Outlook –

Unstable Times – Problems or Opportunities?

-- August 2005 --

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Center for Paper Business and Industry Studies (CPBIS) – Jim McNutt
Overview

North America Pulp & Paper Industry -- Update & Outlook

- Where are We?
- Industry Performance
- Economy
- Grade-By-Grade Discussion
- Industry Spending
- Investment Decisions’ Drivers
- Wrap-up and Q&A
Outlook – Where Are We?

- The North American pulp and paper industry is currently enjoying a cyclical rebound – *helped greatly by the capital constraints and capacity rationalizations of recent years*.

- However, the industry remains at risk from:
  - Slowing -- but improving of late -- *domestic demand growth*
  - Rising *international competition – but some changes evolving*
  - Substitution *pressure from alternative substrates & medias*
  - Aging *domestic asset base – requiring investment attention*
  - Nagging poor -- but improving -- *financial performance*
  - Lure of pent up expansion plans *in an improving market – risks of past behavior still overhanging*
Rebounding pulp & paper demand, closure of unviable facilities, a weaker US dollar & strong economic growth are driving moderately increased volume, (erratic) prices and profitability in the NA industry.

- The rebounding demand growth has been modest and could take years to reach peak 1999 to 2000 levels.
- The returning supply and demand balance currently favor producers but could shift back to customers circa 2007 as higher prices dissuade consumption and capacity could again begin to expand.
- Yet – the improved fundamentals do create opportunities to stabilize the NA Industry platform looking out . . .
Creating shareholder value is the goal of the firm
Successful companies continuously identify and successfully execute investments with returns greater than cost of capital
The industry has not made target returns and, therefore not attracted necessary capital investment – but this could be turning . . .
Performance has traditionally followed excess capacity and pricing – yet – as noted – we may be entering a new era here
And note that – total shareholder returns have held up better than some standard industry benchmarks

Industry performance and shareholder returns are improving but still below the level required by investors to make a fair return at this time . . .
Outlook – Industry Performance

2005 Returns Are Improving – But Still 4 Points Below Target – Rational Investors Will Not Allocate Capital To A Poorly Performing Industry – Key Question = Is The Industry Situation Changing?

ROTC averages 6.7% vs. 11.0% cost of capital

Return On Total Capital

Cost of Capital
Outlook – Industry Performance

Total Shareholders’ Returns Still Trail S&P 500

The S&P 500 Rebound Still Leaves Pulp & Paper Industry Shareholders Wanting – Underperforming The Index By 2-3 Points Per Year Since 1992
Outlook – Industry Performance

Overall:

- US industry financial performance has been poor on an absolute basis and persistently weak from the late 90’s through today – But we are seeing improvements.

- These short-term performance improvements are a welcome relief for the industry but could be transient if industry management is again tempted to significantly increase major capacity oriented [instead of performance enhancing] capital investments.

- The quality of pending investment decisions, basic economic and demand factors, and the industry’s motivation to pursue innovative structural change will drive industry performance in the mid-to long-term . . .
### Outlook -- The Economy

<table>
<thead>
<tr>
<th>Real GDP Growth By Region</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advanced Economies</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US</td>
<td>1.9%</td>
<td>3.0%</td>
<td>4.4%</td>
<td>3.4%</td>
</tr>
<tr>
<td>Euro Area</td>
<td>0.8%</td>
<td>0.5%</td>
<td>2.2%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Japan</td>
<td>-0.3%</td>
<td>2.5%</td>
<td>4.4%</td>
<td>2.3%</td>
</tr>
<tr>
<td>UK</td>
<td>1.8%</td>
<td>2.2%</td>
<td>3.4%</td>
<td>2.5%</td>
</tr>
<tr>
<td>Canada</td>
<td>3.4%</td>
<td>2.0%</td>
<td>2.9%</td>
<td>3.1%</td>
</tr>
<tr>
<td>Other Advanced Economies</td>
<td>3.6%</td>
<td>2.4%</td>
<td>4.3%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Newly Industrialized Asian Economies</td>
<td>5.0%</td>
<td>3.0%</td>
<td>5.5%</td>
<td>4.0%</td>
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<tr>
<td><strong>Other Emerging Markets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Africa</td>
<td>4.8%</td>
<td>6.1%</td>
<td>6.6%</td>
<td>5.9%</td>
</tr>
<tr>
<td>Central and Eastern Europe</td>
<td>3.5%</td>
<td>4.3%</td>
<td>4.5%</td>
<td>5.4%</td>
</tr>
<tr>
<td>Commonwealth of Independent States</td>
<td>4.4%</td>
<td>4.5%</td>
<td>5.5%</td>
<td>4.8%</td>
</tr>
<tr>
<td>Developing Asia</td>
<td>5.4%</td>
<td>7.8%</td>
<td>8.0%</td>
<td>6.6%</td>
</tr>
<tr>
<td>Middle East</td>
<td>6.6%</td>
<td>7.7%</td>
<td>7.6%</td>
<td>6.9%</td>
</tr>
<tr>
<td>Latin America</td>
<td>4.3%</td>
<td>6.0%</td>
<td>5.1%</td>
<td>4.8%</td>
</tr>
<tr>
<td><strong>Other Emerging Markets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Africa</td>
<td>-0.1%</td>
<td>1.8%</td>
<td>4.6%</td>
<td>3.6%</td>
</tr>
</tbody>
</table>

Overall Economic Growth Projections Do Favor Continued Demand Growth In The Industry
### Outlook -- The Economy

**NA Sectors That Directly Drive Pulp & Paper Demand Are Projected To Be Weaker Than Overall GDP – But Remain Positive**

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Real GDP</td>
<td>All</td>
<td>2.5%</td>
<td>4.1%</td>
<td>2.5%</td>
<td>3.4%</td>
<td>3.0%</td>
</tr>
<tr>
<td>Implicit Price Deflator</td>
<td>All</td>
<td>2.4%</td>
<td>1.6%</td>
<td>1.9%</td>
<td>3.6%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Personal Consumption Expenditures</td>
<td>All</td>
<td>2.6%</td>
<td>4.4%</td>
<td>3.2%</td>
<td>3.1%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Industrial Production</td>
<td>All</td>
<td>3.5%</td>
<td>6.0%</td>
<td>0.1%</td>
<td>3.7%</td>
<td>2.5%</td>
</tr>
<tr>
<td>Indust. Prod. - Non-Durables</td>
<td>Containerboard</td>
<td>1.8%</td>
<td>1.3%</td>
<td>-0.6%</td>
<td>2.2%</td>
<td>0.9%</td>
</tr>
<tr>
<td>Indust. Prod. - Durables</td>
<td>Packaging</td>
<td>4.9%</td>
<td>9.5%</td>
<td>0.7%</td>
<td>5.7%</td>
<td>5.3%</td>
</tr>
<tr>
<td>Food &amp; Beverage Sales</td>
<td>Boxboard</td>
<td>1.9%</td>
<td>3.2%</td>
<td>3.6%</td>
<td>5.0%</td>
<td>3.1%</td>
</tr>
<tr>
<td>Food services and drinking places</td>
<td>Tissue</td>
<td>4.8%</td>
<td>5.5%</td>
<td>6.3%</td>
<td>7.4%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Computer &amp; Peripheral Sales</td>
<td>P&amp;W Papers</td>
<td>21.6%</td>
<td>5.2%</td>
<td>2.0%</td>
<td>15.0%</td>
<td>4.6%</td>
</tr>
<tr>
<td>Professional Employment &amp; Business Services</td>
<td>P&amp;W Papers, Tissue</td>
<td>3.4%</td>
<td>5.3%</td>
<td>-0.4%</td>
<td>3.4%</td>
<td>2.7%</td>
</tr>
<tr>
<td>US Households</td>
<td>Tissue, Building Products</td>
<td>1.2%</td>
<td>1.1%</td>
<td>0.2%</td>
<td>1.0%</td>
<td>1.0%</td>
</tr>
<tr>
<td>Housing Starts</td>
<td>Tissue, Building Products</td>
<td>2.5%</td>
<td>2.9%</td>
<td>5.5%</td>
<td>1.0%</td>
<td>-2.0%</td>
</tr>
</tbody>
</table>
Outlook -- Grade-by-Grade Discussion

- North American Market
- NA Boxboard
- NA Containerboard
- NA Newsprint
- NA Printing & Writing Papers
- NA Market Pulp
- NA Tissue
- NA Recovered Fiber & Energy
Outlook -- NA Market Overview

- The weakness in primary pulp and paper demand in the 2000s has as noted corrected -- due in part to improving domestic economic conditions.

- This -- combined with the closure of significant capacity within the industry -- has put supply relatively in balance with demand.

- Producers have been generally successful implementing price increases -- so far -- in this environment.

The net result is a cyclical upturn in the US pulp and paper industry that could reverse circa 2006 / 2007.
The North American Pulp and Paper industry is a mature web of businesses generally characterized by:

- Highest per capita consumption in world across all grades
- Slower growth than real GDP
- High capital intensity
- Cost and price based competition
- Below cost of capital returns
- An aging asset base
- Cyclical pricing and profitability.

Historically, the North American industry expanded after each cyclical peak. Excess capacity was then been pushed onto international markets – *This pattern has finally changed.*
Outlook -- NA Market Overview

Today the NA Industry business environment has stabilized due to a combination of factors:

- A weakening US dollar
- Rebounding domestic demand
- Improving returns
- Weakening competitiveness of European producers
- Moderating industry growth in developing regions
- Better understanding by industry leaders of the role of capacity and spending management

This represents a substantive change from the past five years of persistent weakening overall market place and industry performance.
Outlook -- NA Market Overview

This has generated a much needed breath of fresh air for the NA Industry to take stock, and determine its path forward under more stable and positive circumstances...

Accordingly -- the North American industry does have a window of opportunity to further restructure and innovate to better compete in the changing global market looking out — but the business environment for such enhancement moves is transient — and time is likely essential.
Outlook – NA Market Overview

<table>
<thead>
<tr>
<th>Grade Segment</th>
<th>Change in Capacity (Tons/Tonnes)</th>
<th>Compound Annual Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA Boxboard</td>
<td>-74</td>
<td>609</td>
</tr>
<tr>
<td>U.S. Containerboard</td>
<td>-1,292</td>
<td>1,516</td>
</tr>
<tr>
<td>NA Newsprint</td>
<td>-2,057</td>
<td>-2,328</td>
</tr>
<tr>
<td>NA Printing &amp; Writing</td>
<td>-1,221</td>
<td>-51</td>
</tr>
<tr>
<td>NA Tissue</td>
<td>800</td>
<td>131</td>
</tr>
<tr>
<td>NA Market Pulp</td>
<td>-352</td>
<td>532</td>
</tr>
</tbody>
</table>

Industry Surveys And Projections Both Indicate That Capacity Could Begin To Grow Again Between 2005 And 2010 – But At A Much Lower Than Historic Rate And From A Reduced Base
Outlook – NA Boxboard

Boxboard is a weak but stabilizing NA segment --

- *Slow growth in industries that consume boxboard*, increased competition from overseas producers and *widespread substitution* by plastics and alternative packaging materials have hurt producers.

- Profitability/returns *are better than industry average* despite these poor fundamentals due to a relatively concentrated supply base.

- Facility closures have brought *supply and demand in line*.

**Implications:** Slow capacity growth projected but relatively high risk of falling demand and additional facility closures.
Outlook – NA Boxboard

NA Boxboard Demand Growth Now Significantly Lags GDP – Bleached Board Growth Slightly Outpaces Recycled
Outlook – NA Boxboard

Both Demand And Supply Have Resumed Growth But Will Take Several Years To Reach Historic Levels.
Outlook – NA Boxboard

NA Boxboard Has Consolidated & Reduced Excess Capacity – But Will Be Tempted To Add Capacity In The Out-years If Demand Continues To Grow
Outlook – NA Boxboard

The Recent Rebound In NA Prices Is Faltering – Long-term Prices Continue To Trend Downwards
Outlook – NA Containerboard

This NA Containerboard segment has undergone one of the most extensive restructurings within the industry:

- Concentration of top producers has gone from one of the lowest to highest in the industry – improved capacity utilization and expansion discipline has followed.
- Further acquisitions by large players will be difficult.
- However, NA producers have lost export market to new overseas capacity, especially in China and Germany.
- Profitability and returns are lower than industry average.
- Slack capacity absorbed quickly with improved economy.

Implications: Producers are expected to grow capacity slowly with demand – risks of further closures persist from loss of volume in export markets and to substitutes.
Outlook – NA Containerboard

NA Containerboard Demand Continues To Grow At A Rate Closely Tied To Domestic Non-Durables and Durables Production
Outlook – NA Containerboard

NA Capacity Is Expected To Be Well Controlled Relative To Demand
Outlook – NA Containerboard

NA Containerboard’s Excess Capacity Is Now Relatively In Balance
Outlook – NA Containerboard

NA Capacity Reductions Helped Containerboard Producers Maintain & Prices – *But Normal Profits Are Not Yet Being Generated*
Outlook – NA Newsprint

Newsprint is the *weakest overall industry NA segment* --

- Short-term publishing and printing declines have been exacerbated *by substitution to alternative media*
- National and local papers continue to *reduce page size*
- Newsprint *is in decline* in the long-term
- Opportunities for further consolidation exist and *significant capacity reductions and grade conversions will continue* . . .

**Implications:** Rational players will spend a minimum of capital and seek value added grade conversions. *No new NA Newsprint mills are likely to be built* -- at least by rational sector players . . .
Outlook – NA Newsprint

NA Newsprint Is A Declining Segment In Long-Term – A Short- to Mid-Term Improvement May Occur But Is Not Projected

Real GDP

NA Newsprint Demand
Outlook – NA Newsprint

Demand, Capacity, Exports, & Shipments Are All Sliding Downward At A Relatively Quick Rate
Outlook – NA Newsprint

The Supply And Demand Situation Has Improved But Excess Capacity Remains
Outlook – NA Newsprint

Capacity Reductions Have Helped Boost Prices -- But A Strong Downward Trend Persists
Outlook – NA P&W Papers

Recent economic slowdown & alternative media substitution have impacted P&W demand negatively --

- Uncompetitive capacity being closed & modest demand increases will tend to reign in excess capacity
- CF, CGW, UCF & GW Grades have seemingly collapsed into one relatively inter-changeable/somewhat flexible grade structure from consumers’ perspectives
- In this context -- CF quickly became commoditized -- displaced by improved CGW grades – changes still expected

**Implications:** Significant repositioning / redeployment of assets – continued M&A & financial constraints.
Outlook – NA P&W Papers (cont.)

In addition -- high end uses -- auto brochures/annual reports -- are being replaced by website versions

- High volume UCF under pressure from overseas competitors, and Newsprint producers are converting capacity to UC and CGW grades creating serious downstream pressures for UCF across time

- Financial returns & growth prospects are similar to industry average & room exists for continued M&A activity

Implications: Certain segments will suffer net capacity reductions and the grade turmoil will continue to create an unstable overall grade-to-grade business environment.
Outlook – NA P&W Papers

P&W Paper
Demand Fundamentals
Began To Change In The Mid-1990s – Minimal And Risky Growth Is Expected Going Forward

![Graph showing relative growth index from 1990 to 2010 with lines for Real GDP, NA UCFS Demand, and Employment - WC Professionals.](image-url)
Outlook – NA P&W Papers

Rising Imports Have Slowed Shipments Relative To Domestic Demand And Further Capacity Rationalization Is Likely
Outlook – NA P&W Papers

Significant NA P&W Over-Capacity Persists – Sustaining A Difficult Market Condition
Outlook – NA P&W Papers

Collapsed Real Price Trends Continue Downward And Recent Pricing Improvements Have Been Disappointing
Outlook – NA Market Pulp

Market Pulp is an intermediate good in the production of the other paper and paperboard grades --

- Pulp Investment returns – *among the poorest* in the industry – *which in some circles is baffling* . . .
- Environmental restrictions – *new capacity additions difficult*
- International producers – *continue to import pulp competitively to US*
- DIP pulps presently *relatively more financially attractive* than virgin pulps

**Implications:** Some capital to be spent on integrated DIP facilities. Capacity will creep up with incremental improvement projects – *Wild card here is China’s fiber demand* . . .
Outlook – NA Pulp

Demand For Market Pulp Follows Other Grades – But Watch China’s Needs and Demands Looking Out
Outlook – NA Pulp

Supply And Demand For Chemical Market Pulp Is Expected To Be Relatively Flat – But Again – Watch China’s Needs Evolve . . .
Outlook – NA BHKP

NA BHKP Capacity Is In Check But Is Expected To Creep Up Over Time – Increasing The Risk Of Capacity Closures
Outlook – NA BSKP

BSKP - Excess Capacity (Short Tons 000s)

-5% 0% 5% 10% 15% 20% 25% 30%

BSKP - % Excess Capacity

NA BSKP Is Carrying Relatively More Capacity Than BHKP – Making It More Sensitive To Swings In Demand

BSKP Is Carrying Relatively More Capacity Than BHKP – Making It More Sensitive To Swings In Demand

BSKP Is Carrying Relatively More Capacity Than BHKP – Making It More Sensitive To Swings In Demand
Outlook – NA Market Pulp

Market Pulp Prices Have Once Again Flattened & Long-term Fundamentals Still Not Strong Going Forward
Outlook – NA Tissue

Tissue is *strongest overall segment* in North America --

- End-product demand is mature – Americans highest per-capita consumers in world & *incremental demand is slow*
- Demand growth is slowing – *but still expanding per capita*
- However – overall company financial returns *less sensitive to supply / demand dynamics* at mill level than other grades
- Regulatory considerations *will limit large M&A activity*
- Both technology changes and *new entrepreneurial entrants* will drive spending
- Excess capacity is building – *but likely to be absorbed*

**Implications:** Segment may be losing some luster – is a day of reckoning coming or will historical market dynamics win out?
Outlook – NA Tissue

NA Tissue Has Innovated To Keep Demand Ahead Of Household Formation

Relative Growth Index (1990 = 1)

- Real GDP
- NA Tissue
- U.S. Households

Constraint Is Needed As Capacity Growth Has Recently Outpacing Demand – But Some Structural Protections Remain.
Outlook – NA Tissue

Excess Tissue Capacity Is Building But Will Moderate As The Rate Of Capacity Additions Slow
Outlook – NA Tissue

Outlook – Recovered Fiber

Recovered Fiber Is Creating Upward Cost Pressures Across Grades – & With China’s Needs – Pressure Expected to Sustain
Outlook – Energy – Oil and Natural Gas

$60+ Bbl Oil
& $7/Mcf
Natural Gas
Will Create
GDP &
Industry
Instability –
But Also
Raise Value
Opportunity
For Wood To
Fuel . . .
US Industry Spending

History – Issues – Directions

- Capital Spending – Overview & Outlook
- Profitability & Capital Turnover
- ROTC Versus Cost of Capital
- Debt Levels
- Production Capacity Expectations
- Capital Spending/Depreciation
- Capital Spending Level
US Industry – Capital Spending

US capital expenditures will continue to be depressed by poor financial performance & slowing of capacity growth --

- M&A crowded out CAPEX on PPE last 5 years – Should ease within largest firms – antitrust constraints
- However, asset swaps & business-line spin-offs likely to accelerate + second-tier players consolidation
- There is risk that unexpected international acquisitions activity will interrupt capital spending patterns

Overall, net M&A impact should be better (less impacting) for CAPEX than the last 5 years – but not enough to offset weak investment fundamentals yet.
US Industry – *Capital Spending*

Combination of economic, pulp and paper market, and financial / investment realities drove US capital expenditures down *from $8+ billion in 2000 to $6+ billion* by 2001 --

- 2005 capital expenditures *will fall again* to $6 billion and then likely cycle between $6.0 billion and $8.5 billion through 2006
- The following table and graphs summarize these historical trends and projections
US Industry – Capital Spending

Capital Expenditures (CAPEX) On Pulp & Paper Property, Plant & Equipment (Nominal $ Millions)
Profitability Has Improved, But Continues To Trend Downward – And Is Expected To Weaken For the Remainder of 2005
US Industry – Capital Turnover

Capital Turnover Is Trending Downward Yet Also Has Rebounded & Trend May Be Flattening
US Industry – Debt Levels

Improved Debt Levels Are Still Constraining Needed Business Investments – Yet Debt is Now Much Lower Cost Than Equity
US Industry – *Production Capacity Expectations*

Total US Paper & Board Consumption *Is Resuming Growth* – While Overall Capacity *Is Relatively Flat*
US Industry – *Capital Spending/Depreciation*

US Capital Expenditures Remain Significantly Below Depreciation Levels – But Seem To Have Stabilized
US Industry – Investment Decisions’ Drivers

Attractive Opportunities = More Likely To Invest

- **Strong ROTC** = Proven capability to identify/execute value creating projects – more likely to attract & invest capital *than poor performers*

- **Good Outlook Product Mix** = More likely to invest (i.e. tissue, selected P&W) *than poorly performing segments* (i.e. boxboard, newsprint, UCF, market pulp)

- **Geographic Mix** = Firms in Higher growth geographic markets (i.e. Asia & Latin America) more likely to invest than US and Canadian *(and now some European)* focused players
US Industry – Investment Decisions’ Drivers

Greater Capital Availability = More Likely To Invest

- **Debt-To-Capital Ratio** = High debt % – the more likely to divert cash to lower debt instead for capital expenditures

- **Debt Capacity** = Low debt % – creates real opportunities to use *new low cost debt* for innovative investment moves

- **Cash Flow Available For Reinvestment** = More cash generated by operations, the more funds *typically invested in the business* & to stimulate investors
And Remember . . .

Even though the Current Industry State of Affairs is Still Unstable & Many Systemic Problems Remain -- As that Famous Arm Chair Philosopher Ziggy Once Said . . .

“You can Complain Because Roses have Thorns, or you can Rejoice Because Thorns have Roses”
Recap & Final Thoughts

The essential focus we should have at this place in our industry’s path forward is that the future is ours to create – timidity will undermine our efforts . . .

And . . . In this context – our challenge is really to seize the opportunities instead of simply enjoying our respite – to innovate and restructure in new and novel ways . . .
Recap & Final Thoughts

Thank You! -- Copies Available At

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