Paper Industry Outlook and Implications

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Agenda

Current Situation

Industry Outlook

Implications
Current Situation
Industry Returns Consistently Fall Below the Cost of Capital

North American Pulp and Paper Industry Returns (%)

Average ROTC 6.8%
Average Cost of Capital 11.0%
Capital Spending Has Declined to Non–Sustainable Levels

US Paper Industry Capital Expenditures as % of Depreciation

PP&E % of Depreciation

0 50 100 150 200 250 300

The US Industry Has Not Been Committed to R&D

R&D Spending as a % of Sales
For Selected US Industries

Based on spending between 1997-2001
Virtually All Capacity Expansion Has Been Focused Overseas
### Negative Industry Dynamics Overshadow Positives Overall

<table>
<thead>
<tr>
<th>Positives</th>
<th>Negatives</th>
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<tbody>
<tr>
<td>• Industry has rationalized and consolidated</td>
<td>• Poor historic economic returns</td>
</tr>
<tr>
<td>• Some high cost assets have been retired</td>
<td>• Lower cost overseas production</td>
</tr>
<tr>
<td>• Prices and demand are improving with economy</td>
<td>• Investment levels low and declining</td>
</tr>
<tr>
<td>• Globalization trend creating new, positive dynamics</td>
<td>• Substitutes gaining ground</td>
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<tr>
<td></td>
<td>• Per capita consumption leveling off or declining</td>
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- Poor historic economic returns
- Lower cost overseas production
- Investment levels low and declining
- Substitutes gaining ground
- Per capita consumption leveling off or declining
- Investments going overseas
Domestic demand growth is no longer as predictable as it was in 1990’s

- US paper and board consumption has declined over the past three years
- Economic downturn has changed some usage behaviors
- Substitutes continue to grow share in both printing and packaging markets
- Changing demographics have been / will continue to change paper requirements
Paper and Board Supply Dynamics

Globalization has had profound effects on industry

• Better investment opportunities exist in other regions and markets
• Excess capacity in low cost regions has depressed domestic prices and profitability
• Global competitive position of domestic mills has declined due to higher cost structures
• Rationalization of the NA supply base has reduced capacity and overall production costs
• Increased domestic opportunities exist for foreign suppliers
Industry Technology Development

Process Optimization continues to be the primary focus within the industry

• Technology development has been focused in Europe and mostly applied there and in developing countries
• European owned producers have been most active in base sheet development
• Coating, filler, chemical, and software suppliers have been most successful at improving process performance
• Digital printing technologies have been primary driver of base sheet development
June YTD Price Increases Have / Will Help Industry Performance

Recent and Longer-Term Price Changes for Selected Grade Segments

<table>
<thead>
<tr>
<th>Product Segment</th>
<th>June 2004 % Change</th>
<th>10 Year Average % Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coated and laminated paper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coated and laminated single and multi-web film</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Writing and printing papers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coated and laminated single and multi-web paper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Misc. converted paper and board products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packaging and industrial converting paper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Converted paper and paperboard products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paper, plastic, and foil bags</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pulp, paper, and allied products</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

-1.0% 0.0% 1.0% 2.0% 3.0% 4.0% 5.0%
Industry Outlook
P&P Production Will Continue to Shift to Developing Countries

![Projected Paper and Board Production Shift](image)

- **Emerging Markets**
- **Developed Markets**

- 1980: Over 80% in Developed Markets, 15% in Emerging Markets
- 1990: 75% in Developed Markets, 25% in Emerging Markets
- 2000: 70% in Developed Markets, 30% in Emerging Markets
- 2010: 66% in Developed Markets, 34% in Emerging Markets
- 2015: 60% in Developed Markets, 40% in Emerging Markets

% of Global Production (Tons)

- 1980: 65,000 Tons
- 1990: 60,000 Tons
- 2000: 55,000 Tons
- 2010: 50,000 Tons
- 2015: 45,000 Tons
Paper Consumption Growth Will Also be Centered in Emerging Markets

### Demand growth %/yr (2000-2015)

- **North America:** 2015 - 320 kg/person, 2000 - 325 kg/person
- **Latin America:** 2015 - 264 kg/person, 2000 - 207 kg/person
- **North America:** 2015 - 207 kg/person, 2000 - 325 kg/person
- **Eastern Europe:** 2015 - 51 kg/person, 2000 - 30 kg/person
- **Asia excl. Japan & China:** 2015 - 63 kg/person, 2000 - 54 kg/person
- **Africa:** 2015 - 320 kg/person, 2000 - 325 kg/person
- **Western Europe:** 2015 - 264 kg/person, 2000 - 207 kg/person
- **Japan:** 2015 - 51 kg/person, 2000 - 30 kg/person
- **North America:** 2015 - 320 kg/person, 2000 - 325 kg/person
- **Average:** 2.2 %/yr

### Per capita consumption

- **World:** 2000 - 54 kg/person, 2015 - 63 kg/person
- **North America:** 2000 - 325 kg/person, 2015 - 320 kg/person
- **Western Europe:** 2000 - 207 kg/person, 2015 - 264 kg/person
- **China:** 2000 - 30 kg/person, 2015 - 51 kg/person

Source: JP World Paper Demand 2015
Industry Prices are Expected to Improve Through 2005

Price Trend and % Change for Key Paper / Board Grades

- Market Pulp (10.4%)
- Linerboard (4.7%)
- Recycled Boxboard (4.4%)
- Uncoated Freesheet (3.4%)
- Coated Freesheet (3.1%)
- Corrugated Boxes (2.5%)

% indicates Average Annual % Change
US Capacity is Expected to Recover Slightly after Recent Reductions

US Paper and Board Capacity Growth

Annual % Change


2.7 2.9 2.8 0.6 0.6 1.4 -1.9 -1.3 -0.4 -0.6 0.6 0.3
### North American Capacity Changes (000 Tons)

<table>
<thead>
<tr>
<th>Grade</th>
<th>2000-2002</th>
<th>2003-2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulp</td>
<td>(2,412)</td>
<td>(883)</td>
</tr>
<tr>
<td>Newsprint</td>
<td>(1,046)</td>
<td>-</td>
</tr>
<tr>
<td><strong>Printing &amp; Writing</strong></td>
<td>(1,007)</td>
<td>1,912</td>
</tr>
<tr>
<td>Containerboard</td>
<td>(926)</td>
<td>433</td>
</tr>
<tr>
<td>Boxboard</td>
<td>(220)</td>
<td>111</td>
</tr>
<tr>
<td>Tissue</td>
<td>588</td>
<td>469</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>(5,023)</td>
<td>2,042</td>
</tr>
</tbody>
</table>
Consolidation Should Continue Which Will Lead to Lower Price Volatility

Consolidation Impact on Price Volatility

Share of Top 5 Producers

Price Volatility (Std Deviation %)

Bleached Softwood Kraft Pulp
Kraft Linerboard
Lightweight Paper
Testliner
Major Industry Restructuring Will Continue

- Imported paper share will continue to increase over the longer term
- Real prices will continue their downward trend but price volatility will be lower
- Industry will continue to consolidate and net capacity growth will be minimal over the next 10 years
- Number of domestic suppliers of specific grades will decrease although offshore alternatives will be greater
Net Imports Are Expected to Decline Over Next Few Years
Future R&D Will Be Limited But Some Advancements Will Occur

- Higher performing specialty papers
- Increased consistency and uniformity
- Lighter weight papers that offer comparable opacity and strength
- Higher quality recycled papers
- Increased brightness at same cost
- More consistent and functional coatings
- Improved inventory management and supply chain services
Continued Share Erosion for Domestic Producers

- Import share will continue to grow although at a lower rate.
- Overexpansion in Europe will force mills to continue to service the US market.
- Asian producers will continue to push excess production offshore during periods when capacity growth outpaces domestic demand.
- Higher brightness and gloss levels of foreign sheets will drive continued aesthetic improvements.
So What Does This Mean?
Changing Market Dynamics Will Continue to Impact the Industry

Changing Dynamics

- Lower cost / more effective electronic media
- Aging population and other demographic shifts
- Print technology changes
- Increased demand for better packaging solutions
- Lower cost production in developing countries
- Globalization trend
POV #1 -- Changing Dynamics Will Threaten Industry’s Future

Changing Dynamics

• Lower cost / more effective electronic media
• Aging population and other demographic shifts
• Print technology changes
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Industry Threat

• Lower growth rates in communication markets
• Reduced demand for industry products
• Reduced importance of paper
• Increased demand for competing materials
• Increasing share for imported papers
• Increased competition and lower paper prices
POV #2 -- Changing Dynamics Will Present New Opportunities

Changing Dynamics

- Lower cost / more effective electronic media
- Aging population and other demographic shifts
- Print technology changes
- Increased demand for better packaging solutions
- Lower cost production in developing countries
- Globalization trend

Growth Opportunity

- Increased focus on unique advantages / benefits
- New applications and consumer needs
- Shift to higher value digital papers
- Will spur innovation and new growth opportunities
- Shift toward specialties and value added products
- Opportunity to leverage brands overseas
## NA P&P Companies Must Address Key Issues

<table>
<thead>
<tr>
<th>Issues</th>
<th>Corrective Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Companies are not returning cost of capital</td>
<td>• Re-focus on the best opportunities</td>
</tr>
<tr>
<td>• Asset base is becoming increasingly uncompetitive</td>
<td>• Continue to rationalize / divest</td>
</tr>
<tr>
<td>• R&amp;D investment continues to be low</td>
<td>• More targeted / strategic investments</td>
</tr>
<tr>
<td>• Market growth rates are declining</td>
<td>• Leverage hidden / intangible assets</td>
</tr>
<tr>
<td>• Internal / operations focus continues to be priority</td>
<td>• Become customer centric / solutions oriented</td>
</tr>
</tbody>
</table>
Implications for Paper Suppliers

Producers will need to:

• Focus limited marketing, R&D, and capital investment dollars on core markets
• Improve internal processes to make more uniform papers
• Commercialize new manufacturing methods that are now employed overseas
• Aggressively pursue joint development initiatives with coating, filler, ink and equipment suppliers
Industry Leaders Must Develop New Growth Trajectories

- Supporting services that reduce customer manufacturing / supply chain costs
- Integrated customer solutions that incorporate chemicals, equipment, ink, and complementary services
- Finished, converted products for direct sale to commercial and retail accounts
- New, higher performing substrates that complement existing offerings to targeted segments
- Geographic expansion into developing regions
Implications of Industry Changes to AIMCAL Converters

• Foreign owned / based suppliers will become bigger factors in commodity segments
• Weak domestic suppliers will disappear causing potential supply disruptions
• Focused suppliers will become more innovative and customer oriented
• Some producers may forward integration and also offer more integrated solutions
• New materials / services will become available that reduce supply chain costs
Final Thought

“There is no such thing as a mature market…..

“just marketing plans that do not identify and take advantage of growth opportunities”

Ram Charan

*Every Business is a Growth Business*
CLICK TO RETURN TO LIST OF PAPERS AND PRESENTATIONS