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Trends in Recycled Containerboard

AICC Region 9 Meeting
September 17, 2009



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Trends in Recycled Containerboard

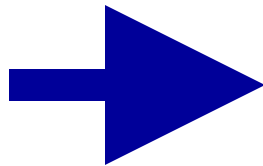
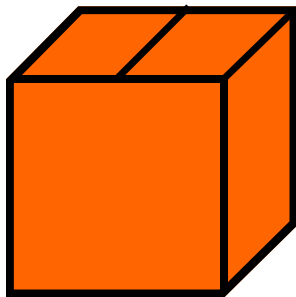
- Mullen vs. ECT based packaging
- Basis weight reduction and product performance
- “Right-weighting”
- Papermaking Technology
- Environmental benefits
- Global perspective: European and Asian influences on US trends



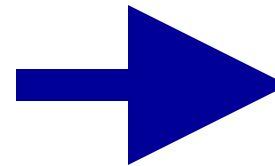
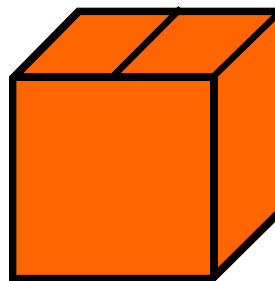
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“Right-Weighting”

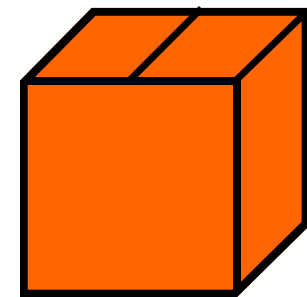
1940 - 1990



1991 - Present



Future?



Rule 41/Item 222
200 Test

“Alternate Rules”
ECT/SCT

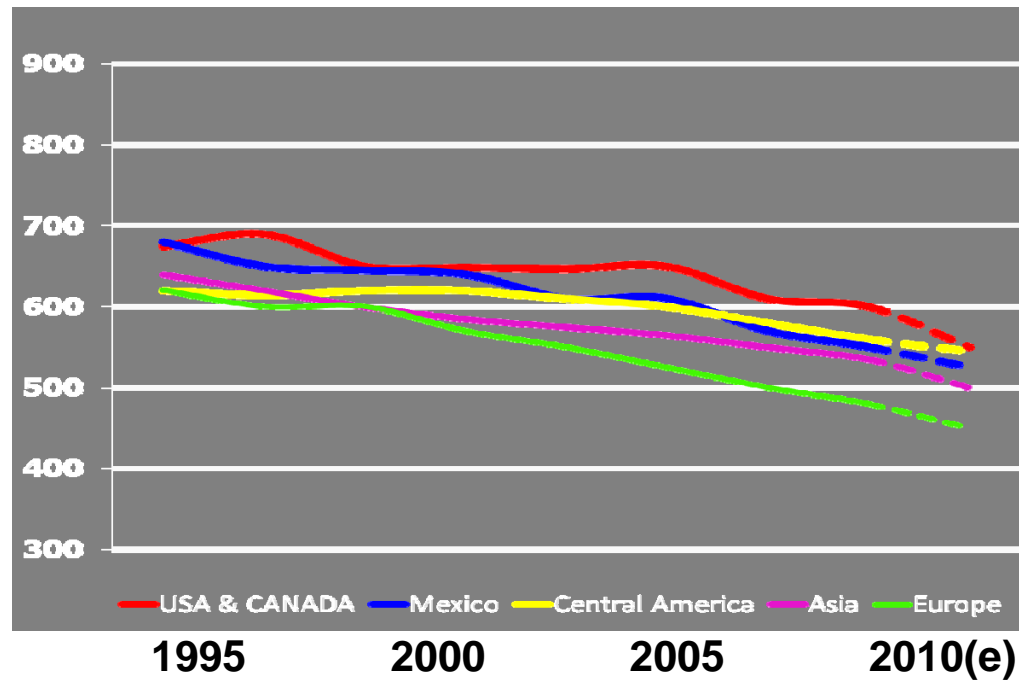
Customers Will Decide



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“Right-Weighting”

Average Weight of Corrugated Boxes



- North American combined board weights are down 15% since 1992

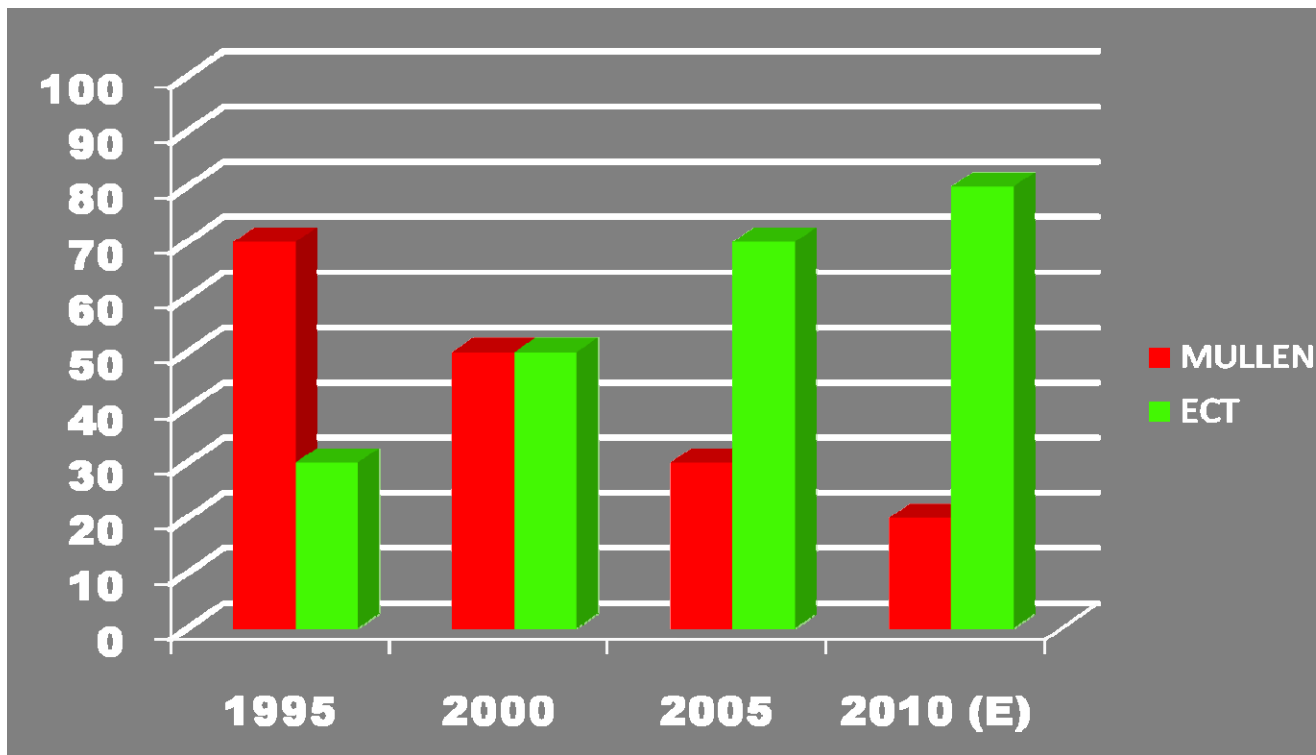
Source: Jaakko Poyry Research (2005) – S. Kolp; AF & PA,



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Mullen vs ECT Based Packaging

Board Grade Structure
Mullen vs. ECT Comparison

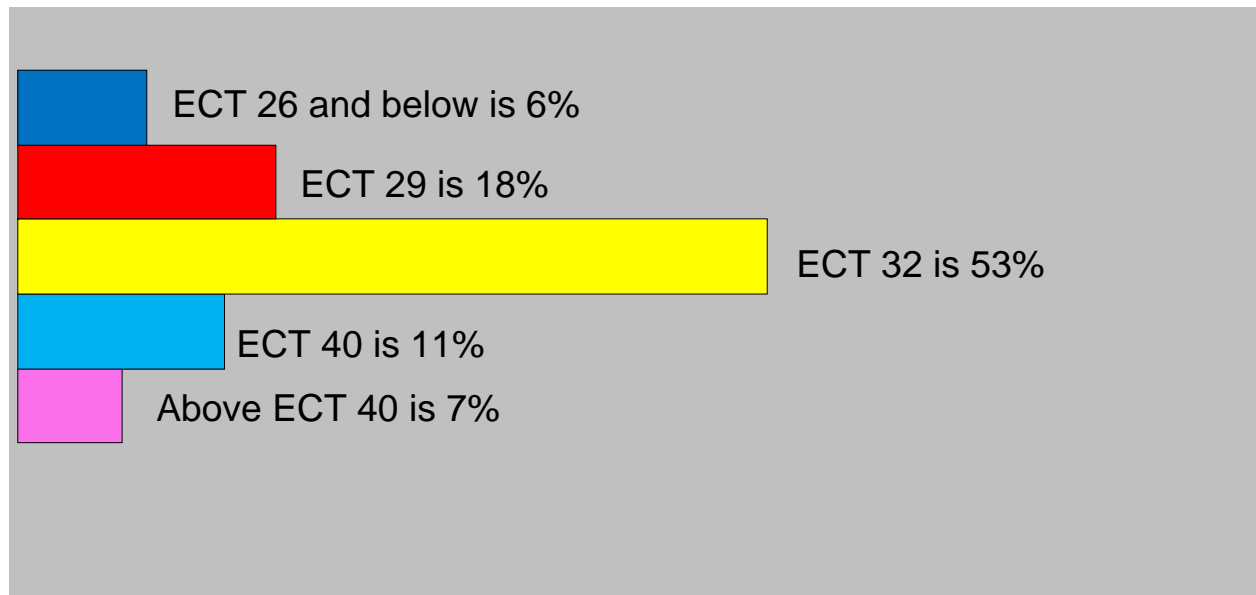




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Mullen vs. ECT Based Packaging

Corrugated Market in 2007 and ECT Segmentation



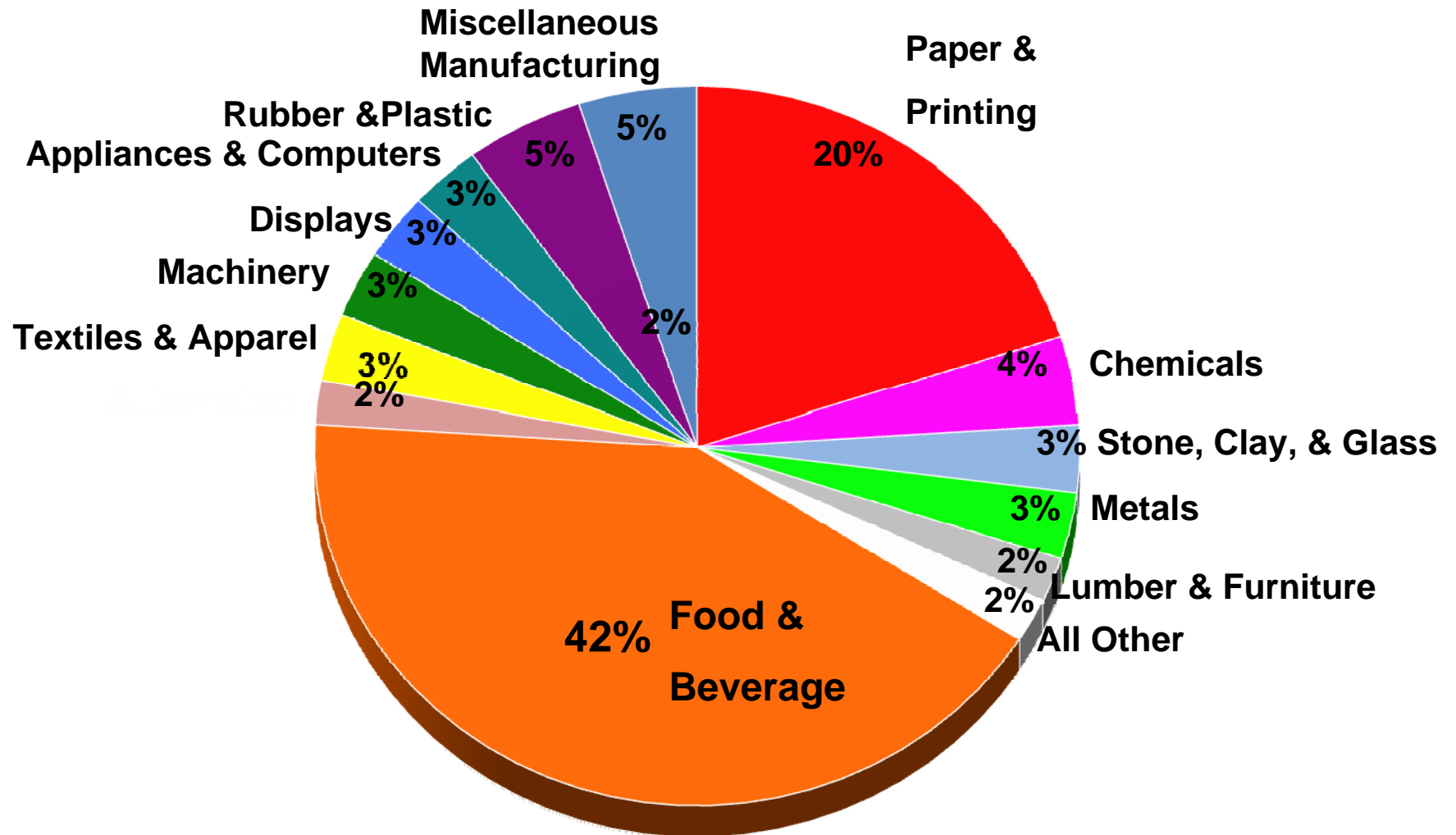
The U.S. consumes 30 million tons of corrugated annually with an estimated 70% ECT-based packaging.

Source: FBA, AF&PA, Pratt Market Research



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Corrugated Key End Uses - USA



Source: 2007 FBA, Pratt Marketing



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Basis Weight Reduction and Product Performance

North American Trends

- US Market consumption of 29-31# recycled liners is growing
- US Market consumption of recycled lighter weight medium is up 30% over 10 years
- Consumption of LWL is stronger in Canada and Mexico than in USA
 - Lightweight DW emerging in Latin America, especially Mexico
- High cost mills are generally those that are heavyweight dependent



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Basis Weight Reduction and Product Performance

Papermaking
Technology
Recycled Furnish



Contain and Protect
Design & Construction

Graphics

Reduced MSF
Sustainability



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Papermaking Technology



Fiber cleaning and screening is a continuous operation.





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Papermaking Technology



Pratt, Shreveport, LA Paper Machine

- Lightweight
- High performance
- Recycled liner and medium



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Papermaking Technology



Information technology for optimum efficiency



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Environmental Benefits



**Clean Energy – Investment of \$50 million
At Conyers, GA Containerboard Mill**



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Environmental Benefits

Investment in Recycling Technology

- **Reduces greenhouse gas emissions by reducing waste at landfills.**

Reduces deforestation

Saves Energy

Produces energy-efficient products

- **Every 2 tons that is prevented from going to landfill is equivalent to taking one car off the road for a year.**





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Global Perspective

European and Asian Influences on US Trends

History:

- **US Mills focused on 42# and 200 gsm and heavier liners which could be used in the box industry in North America and exported.**
- **US and Canadian Mills were the primary source of Kraft Liner to Europe and Asia from 1960 to 1990 – regions with fewer trees.**
- **Europe and Asia began recycling fiber and concentrated on building recycled containerboard mills to produce medium and lightweight liners.**





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Global Perspective

Beginning from 2008 through 2013:

European mills plan to add 1.26 million tons of capacity.

Asian mills plan to add 11.43 million tons:

China	9 .9
Japan	.4
Indonesia	.2
Malaysia	.3
Vietnam	.6

These are announced and probable machine expansions, not including projects still in planning.



Source: RISI



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Global Perspective



Progressive improvements in recycling, papermaking, and converting point toward a future of *doing more with less*.