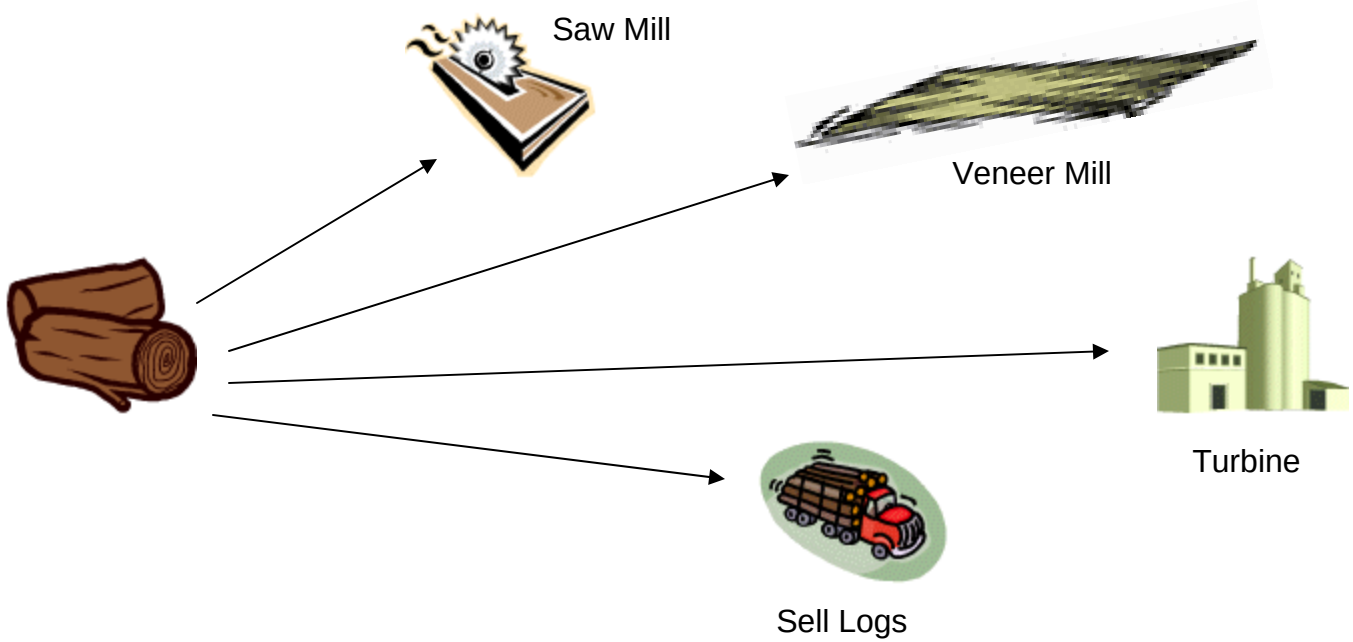
Small Log Utilization

Veneer and Plywood

September 18 ,2007



Business Strategy

State of the Industry

Introduction

- Small Logs – Processed into Veneer ?
- Math and Physics of Processing Small Logs
- Economics
- Conclusions

Small Logs & Veneer

Video Clip

Small Logs and Veneer

- Key Processing Parameters

  - Equipment Capabilities
  - Wood Properties
  - Log Diameter

Small Logs and Veneer

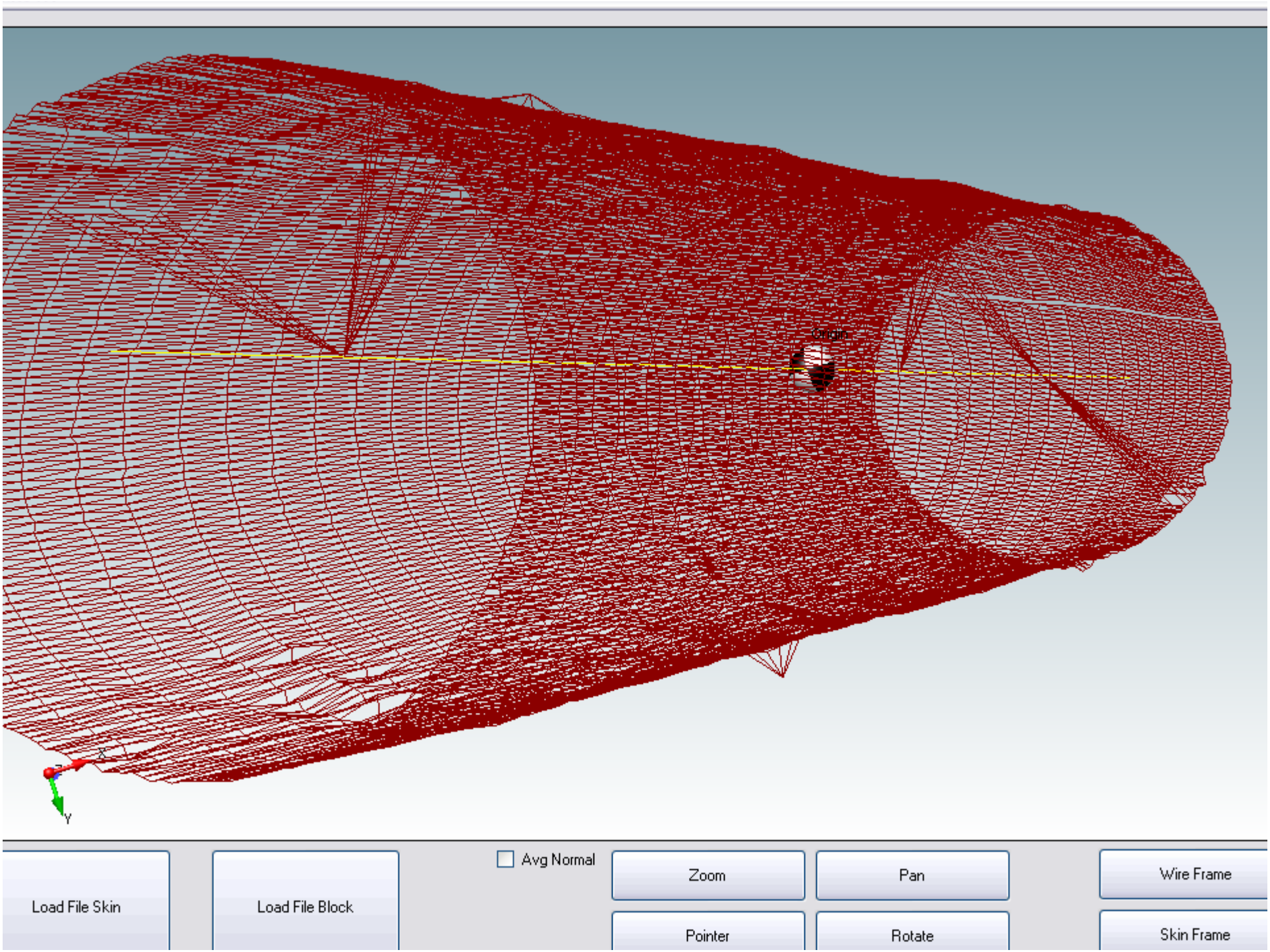
- Scanning and Optimization

- Machinery Capabilities

  - Chucks
  - Core Limit

- Mechanical

  - Veneer Clipping and Recovery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Small Logs and Veneer

Small Logs and Veneer

Small Logs and Veneer

Smart Peel enables large volumes of high-quality veneer to be peeled from different sizes and qualities of blocks.

Small Logs and Veneer

Small Logs and Veneer

- Wood Properties

Strength + Size + Grade = Value

Small Logs and Veneer

- Log Diameter and Veneer Recovery

- The challenge with veneer recovery from small logs is ultimately based on math and physics

- Who remembers taking college Calculus ?

Small Logs and Veneer

- Key Peeling Parameters

- Log Diameter : 6” to 50”
- Core Diameter : 2” to 4”
- Peel Thickness : 1/10 ” to 7/32”
  (for softwoods)

Small Logs and Veneer

- Ribbon length : Typical peel 1/8”with 3.5” core

6 inch block = 13.7 feet

7” = 20.6

8” = 28.6

9” = 37.6

Small Logs and Veneer

- Other operating parameters …….

- Only 70% of a ribbon is recovered as products
- Full sheets are worth 2X what strips are worth , and 3X what short strips are worth
- It’s possible to process 7 blocks per minute
- It costs $2000 per hour to operate a lathe

Small Logs and Veneer

- The bottom line ……..

  In today's market conditions , net of manufacturing costs , a 6" block is worth about $1 as veneer

  It costs about $1.50 to bring the block in from the woods

Small Logs and Veneer

- The bottom line – part II …

  The value of a 6” block as chips is $1.62

  Under current market conditions it’s more economic to chip a 6” block than it is to peel it into veneer .

Small Logs and Veneer Products vs. Chips

Value as chips

- 6” = $1.62
- 7” = $1.94
- 8” = $2.58

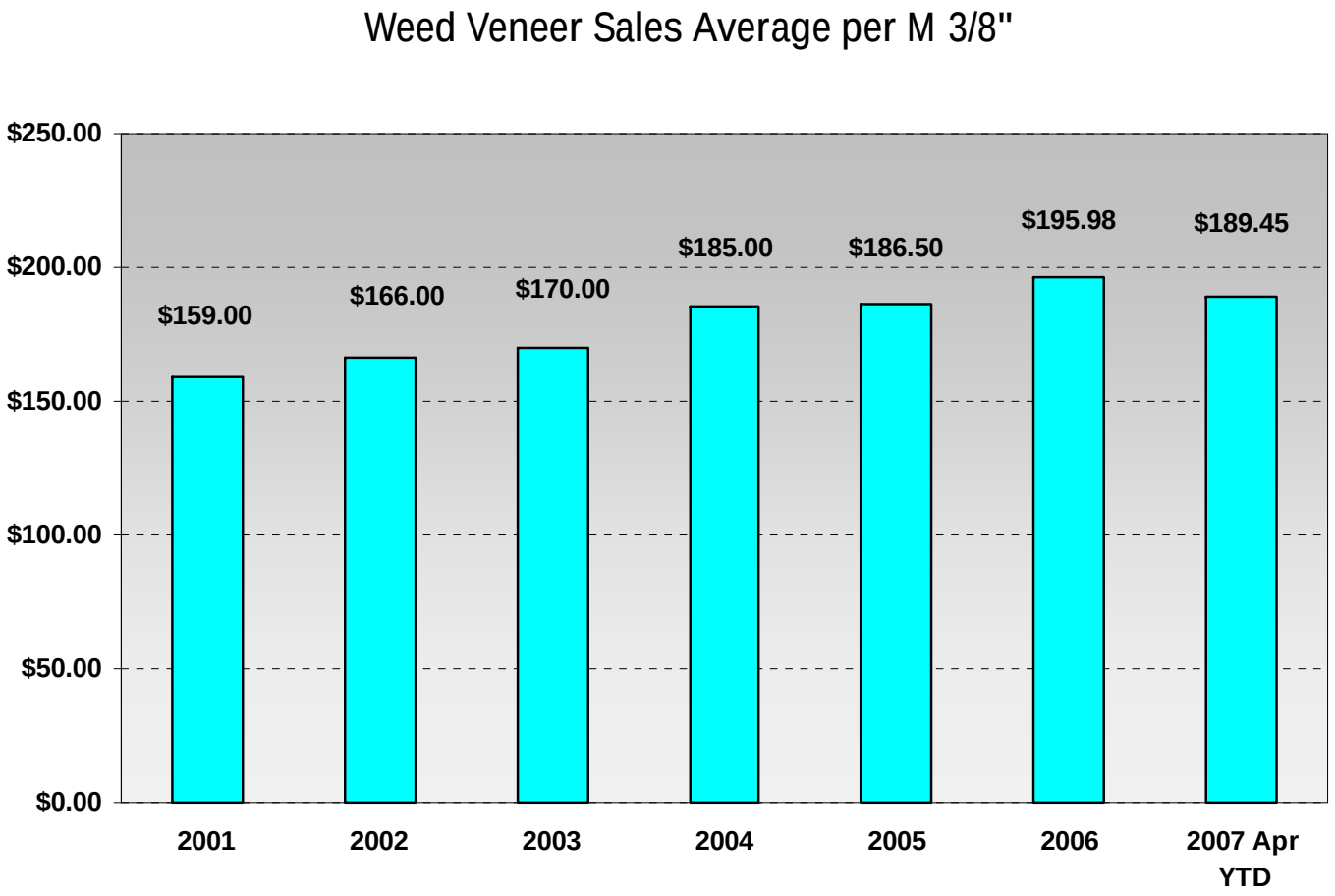
- Value as Veneer

- 6” = $1.00
- 7” = $1.95
- 8” = $2.65

Small Logs and Veneer Economic Recap

- Chip prices are currently near historical high levels
- Veneer prices are above average yet the economics of peeling vs. chipping generally favor chipping small wood – not until the 8” block is peeling the block favored .
- Chip returns still exceed log and haul costs however – so there is a margin to harvesting the fiber
- What does the future hold ?

Historical Veneer Prices



Small Logs and Veneer

- Veneer markets in the future will be influenced by a number of factors :

  - Plywood is projected to remain a cyclical business , and one that faces competitive pressures from expanding North American OSB capacity , as well as off-shore imports

  - Positive factors impacting the veneer business include the expanding demand from LVL producers (laminated veneer lumber)

Small Logs and Veneer
LVL as an end-use product

Engineered Wood

Small Logs and Veneer Conclusions

- Small logs can be converted to veneer products but economics are tough
- Improvements in technology will likely improve mfg efficiency – helping to lower the conversion cost associated with small logs
- There are significant markets for veneer as a product from small logs – while small logs have not historically been a raw material source for the veneer business , there is potential .