Créer des solutions pour le secteur forestier

Product specific market opportunities

François Robichaud, Ph.D.
Research scientist, Forest Products Marketing

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The talk today

Trends driving product development

Product specific opportunities

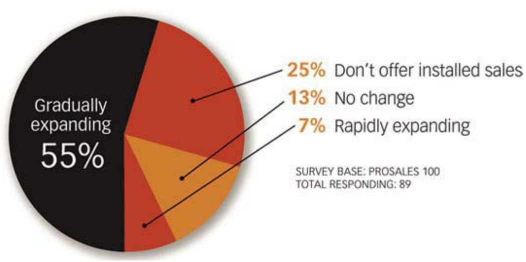
Implications for the industry

Trends driving product development

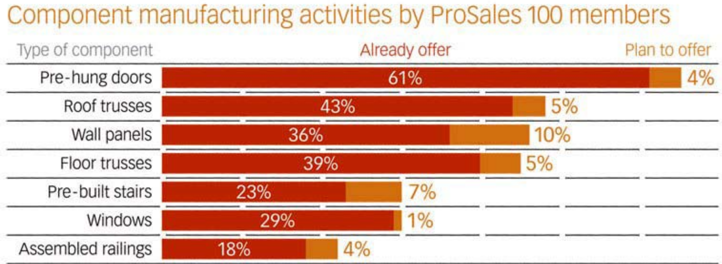
- Distribution channels are changing
- Substitution in building materials
- Industrialisation of homebuilding
- The development of the non residential market

Distribution channels are changing

Expectations of ProSales 100 dealers for their installed services over the next five years



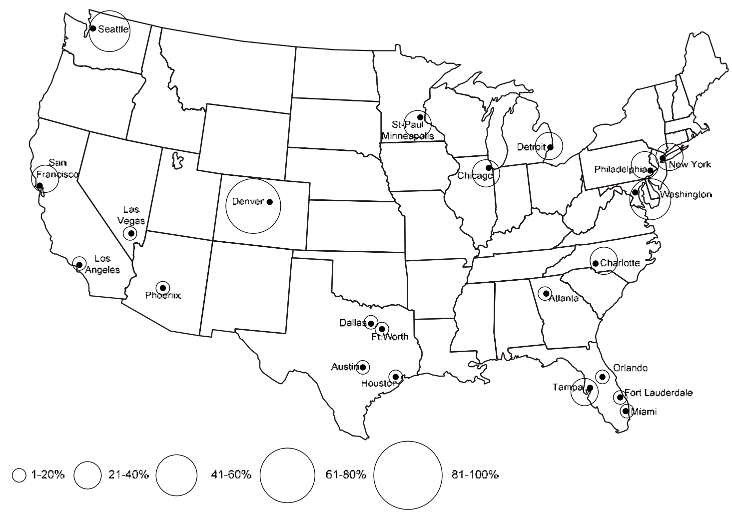
Component manufacturing activities by ProSales 100 members



SURVEY BASE: PROSALES 100. TOTAL RESPONDING 78 TO 85. DEPENDING ON ACTIVITY

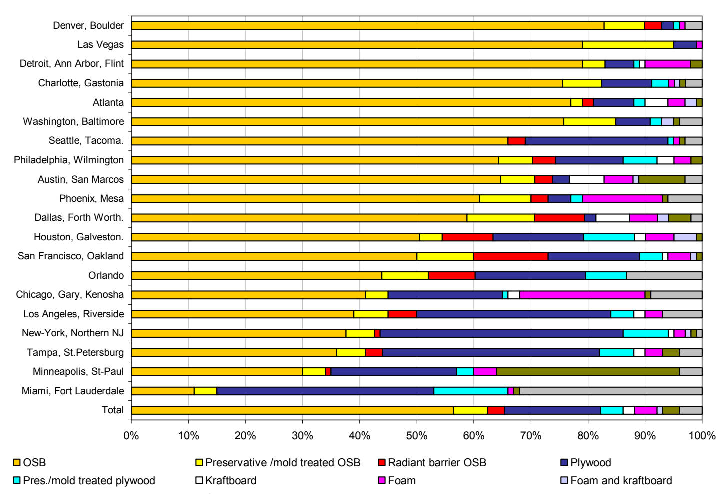
Source: NLBMDA

Substitution in building materials: Composite decking



Source: Robichaud, Gaston, Lavoie and Adair, 2009

Sheathing materials used in wall systems by metro area



Source: Robichaud, Gaston, Lavoie and Adair, 2009

Industrialisation of homebuilding

- Long term trend: the homebuilding process is shifting from the site to controlled factories
  - Prefab home manufacturers
  - Structural components manufacturers
  - Integrated homebuilders (Pulted, etc.)
  - Prodealers
  - Building materials suppliers
- Lumber quality is further required within automated processes
- Building homes just like we build cars
  - Al Schuler

Source: Lavoie et Robichaud, 2008; Lavoie et Laytner, 2007.

Specific market opportunities

- Nonresidential construction
- Hybrid construction
- Crossed-laminated timber
- Raised floor systems
- Treated framing
- Structural composite lumber
- Veneer strand lumber
- Ultra low density insulation
- Profile decking
- Appearance wood products in nonresidential construction

Value proposition—Nonresidential construction

Need

- Energy performance and lower carbon footprint
- Speed of assembly, design flexibility
- The non residential market is less cyclical but as important as the residential market ($300B)

Approach

- Design team to support customers, architects, engineers
- Developing a fabrication capacity
- Production of information (environmental, structural, fire, etc.)
- Sell by the project

Value proposition—Hybrid systems

Need

- Energy performance and lower carbon footprint
- Speed of assembly, low cost
- Lower weight

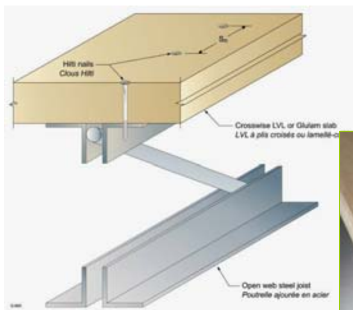
Approach

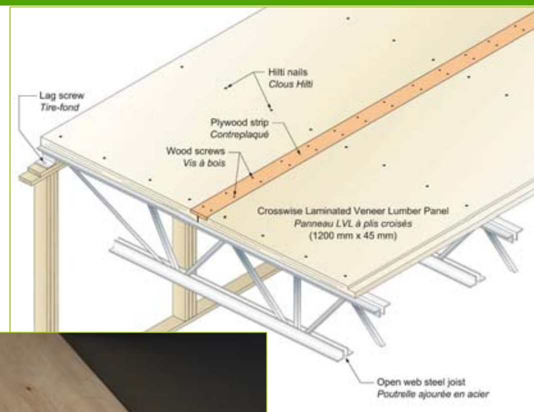
- Work with steel and concrete fabricators, developers

Pine Square – Pacific Court

Examples of hybrid systems

Wood slab over steel joists (CLT, X-LVL, glulam, …)





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20 stories– 4 concrete, 16 in steel post and beams with wood joists and plywood

12 stories– wood decks over steel structure

Linea Nova, Netherlands

Scotia Place, New Zealand

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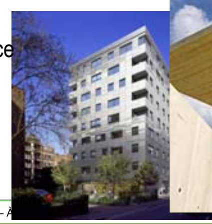
Value proposition—Crossed Laminated Timber (CLT)

Need
- Non-res and multi family mid-rise specifiers looking for building solutions offering technical, cost competitive and environmental performance (3+ billion bf market)
- Green alternatives to concrete slab construction

Approach
- Align North American industry and other stakeholders
- Develop a generic product standard and gain code acceptance (5 years)
- In short run, promote the 'alternative solutions' clause in the IBC

Benefit
- 10-50% less expensive shell costs,
- Green: high carbon storage, superior LCA
- Prefabricated system (fast, safe, precise)
- Excellent seismic, fire, and sound performance

Competition
- Steel / concrete



Value proposition—veneer strand lumber

Need
- Total engineered wood use in North American residential sector in 2006 was 3.9 billion board feet
- Low cost high strength products
- Growing demand for long spans (including for non-res)

Approach
- Develop prototype
  - Novel stranding and forming technology

Benefit
- Combined benefits of veneer and strand products
- High MOE rating at lower cost than similar products
- Improved recovery

Competition
- Concrete / steel; LVL; LSL/OSL; PSL

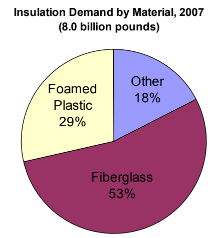
Value proposition—ultra low density insulation

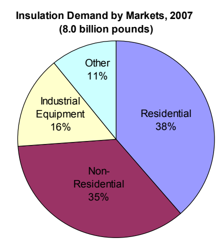
Need

- 8 billion pounds market in 2007 ($10.4 billion)
- Growing demand for ‘healthy house’
- Cost efficient delivery R-value

Approach

- Developed initial prototype; improvement in process; patents pending
- R-value tested is similar to the current product in the market and further research and development continue for fire and moisture resistance
- Indentified two markets, N.A. and China
- Identifying industry partners for manufacture, initially in China
- Estimated time to commercialization is 2-5 years





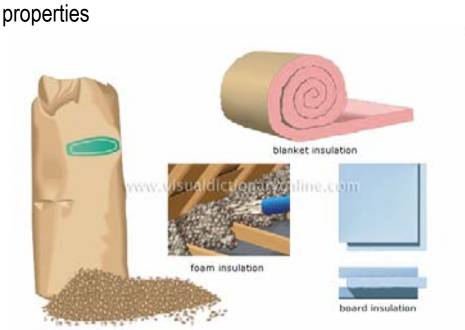
Value proposition—ultra low density insulation

Benefits

- “Healthy house” no harmful airborne particles
- “Green” low environmental impact, renewable resource
- As compared to fibre glass, foamed plastic, agri-fibre insulation
  - Providing similar or better insulation properties
  - Cost competitive
  - Uses excess mechanical pulp

Competition

- Fibreglass insulation
- Foamed plastic insulation
- Agri-fiber Insulation



Value proposition—profile decking

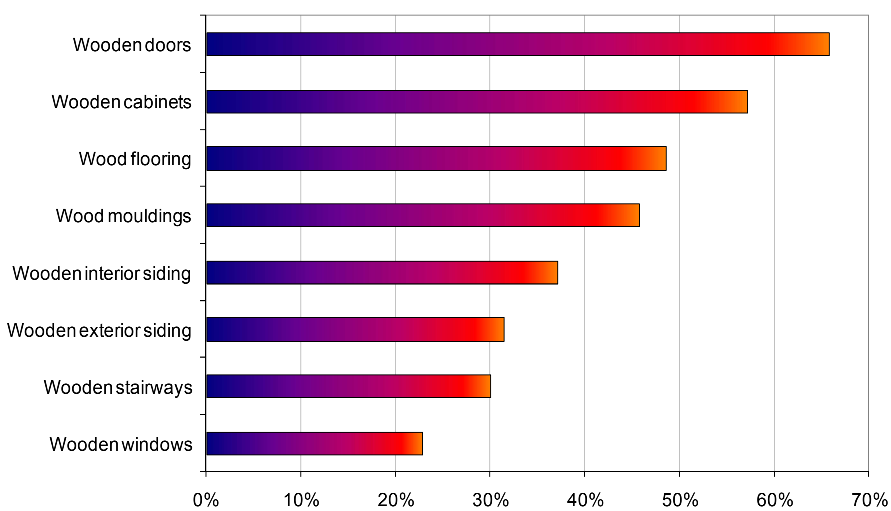
Need
- Decking is a 3+ bbf market in the N.A. ($6 billion *)
- Wood plastic decking has taken 30%+ market share (with considerable price premiums)

Approach
- Produce profiled decking, incl. fall-down utilization
- Vancouver home show
- Establish demonstration sites
- Develop value chain, including product positioning, branding and distribution

Benefit
- Pacific silver fir treatable and dimensionally stable
- Profiling minimizes checking, adds design appeal
- Brandable
- Attractive pricing, high margin / return-to-log potential

Competition
- Plastic wood composites, non-wood

Appearance wood products used in most recent nonresidential construction in Quebec



Source: FPInnovations et Cecobois, 2010

Implications for the industry

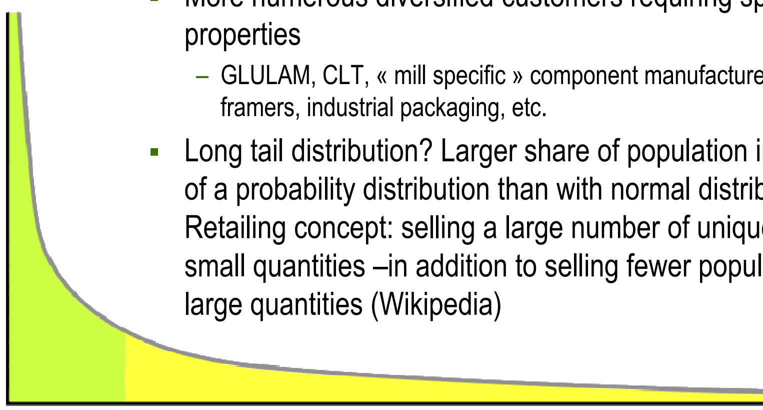
- "Off production" investments
- Further definition of products characteristics: from lowering costs to mastering costs
- Some very large customers, some very specialized
- Move to multifamily and nonresidential construction

"Off production" investments

- Producing knowledge in addition to products
  - Fire, Environment, Normalised communications (EPDs), Carbon, Structural properties, Durability, Acoustics, etc.
- Training for dealers and distributors (desired content):
  - Information on the manufacturer
  - Construction and building trade knowledge
  - « Marketing » the product to sales people
  - Products characteristics and grading
  - Manufacturing
  - Durability
  - Installation
- Product development

Some very large customers, some very specialized

- More purchasing power and greater volumes among fewer hands
  - coops, dealers, structural components manufacturers, large builders
- More numerous diversified customers requiring specific properties
  - GLULAM, CLT, « mill specific » component manufacturers, Timber framers, industrial packaging, etc.
- Long tail distribution? Larger share of population in the tail of a probability distribution than with normal distribution. Retailing concept: selling a large number of unique items in small quantities –in addition to selling fewer popular items in large quantities (Wikipedia)



francois.robichaud@fpinnovations.ca

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