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## Forisk Strategy Note, Q4 2018

### Reinvention and Competition in the Forest Industry: Lessons from Wood Pallets

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#### Summary Messages

- Wood pallet manufacturers use a lot of lumber. They account for about 1 out of every 2 hardwood lumber boards consumed in the U.S. and about 1 in 10 for softwood lumber. However, the economics of the industry require clear priorities and an extreme level of operational dexterity relative to other forest industry sectors.
- This research highlights four lessons from working with PalletOne, the largest new wood pallet manufacturer in the U.S. These lessons are relevant to business strategy generally, and to those focused on the profitability and sustainability of the entire forest industry.
  - 1) **Know your economic place** in the forest industry “universe” over time, especially with respect to the ability-to-pay for wood.
  - 2) **Invest to maximize advantages** that enhance margins or market share or both.
  - 3) **Have a people strategy** that goes beyond hiring and recognizes the retention potential and return on investment from professional development and stretch assignments.
  - 4) **Develop a mental model for how things work** to organize and share your thinking with others.
- Markets can allocate resources, given the incentives in place. However, markets are agnostic when it comes to setting priorities and clarifying values. The lessons in this Note drive home the strategic value of clear metrics, maintaining a framework and context for making decisions, and investing head space and resources into your teams.

#### Introduction

Early in my wood procurement career, my friend and timber buyer Fred Voyles taught me that, as a forester buying logs for a mill, to really learn and have an impact, to improve a situation or reinforce an expectation, to show you know what’s going on and to demonstrate respect, you have to **get out of the truck**. Otherwise, “you’re just getting in the way.”

At Forisk, we spend a lot of time “out of the truck” in operations, collecting data, talking with people and testing ideas when conducting research. Our previous Forisk Strategy Note addressed forest industry disruptions and provided a framework for thinking through changes affecting sectors locally and nationally.<sup>1</sup> This Note shares specific learnings and observations from spending months visiting dozens of wood-using mills and in-woods operations with one firm, PalletOne, to highlight challenges and approaches potentially relevant to the success and sustainability of the entire forest industry.

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<sup>1</sup> “Thinking Beyond Deviations: Changes that Could Disrupt the Forest Industry,” *Forisk Strategy Note*, Q3 2018. Available at: <http://forisk.com/resources/white-papers-and-articles/#forisk-strategy>

## What is a Pallet?

Pallets solve problems in a world reliant on shipping containers to move product. Unlike crates or barrels, pallets provide a stable platform that plays nicely with forklifts, loaders and other crane-like machines tasked with moving and storing heavy stacks. Any stroll through a warehouse or the back end of a big box store will find dozens to hundreds of pallets loaded with corrugated boxes coming from or headed to containers and semi-trailers.

**Figure 1. Wood Pallets Ready to Ship and Load**



Photo taken at PalletOne in Shipshewana, Indiana

Pallets, like those pictured above, are the wooden Lego pieces and “moving trays” used to transport humanity’s consumables, from bricks to books to orange crates and cases of beer. In short, no pallets, no Super Bowl parties.

## U.S. Wood Pallet Sector

The wood pallet business simultaneously fills a niche and sits in a sandwich. The niche absorbs low-grade hardwood logs and low-grade pine lumber to manufacture pallet stock and pallets. On the hardwood side, the pallet sector takes the boards and logs not good enough to produce flooring or veneer or cabinets. On the pine side, pallets use the boards that fail to make the cut for the building and remodeling of homes, or any appearance grade applications.

According to research from the National Wood Pallet and Container Association (NPWCA), **U.S. pallet manufacturers produced 849 million wood pallets** in 2016 (508 million new and 341 million recycled), or 14% more than five years earlier.<sup>2</sup> Figure 2 summarizes the board feet in billions of hardwood and softwood lumber required to manufacture these pallets annually.

<sup>2</sup> Research from NPWCA with Virginia Tech and USDA Forest Service. Lead authors: L. Horvath, B. Gething, and P. Araman. Available at: <https://www.palletcentral.com/page/LandfillAvoidance>

**Figure 2. Lumber Used for Wood Pallets in the U.S. (2016)**

	Hardwood	Softwood
<b>Lumber used for pallets (BBFT)</b>	4.1	5
<b>U.S. lumber consumption, total (BBFT)</b>	8.46	47.26
<b>% U.S. lumber used for pallets</b>	48.5%	10.6%

Data sources: NWPCCA; Hardwood Market Report; WWPA; Forisk

Wood pallets also remind us of the differences in size and priorities of the softwood and hardwood lumber markets. Pallet manufacturers cannot afford the grades of hardwood lumber used in flooring or grades of softwood needed for home construction. And while pallets use 5 billion board feet of softwood lumber, or more than half (55%) of lumber used for pallets, this accounts for less than 11% of U.S. softwood lumber applications. Alternately, wood pallets account for nearly 49% of hardwood lumber consumption, often competing with other industrial uses, such as railroad ties and mats.

**PalletOne**

My friendship with PalletOne CEO Howe Q. Wallace, Jr. made much of this research possible. In March 2016, Howe saw me speak at the National Wood Pallet and Container Association meeting in Orlando, Florida. Afterward, he approached and said, “I don’t really know who you are, but I think we should work together.”

Two weeks later, he traveled from PalletOne headquarters in Bartow, Florida to our office near Athens, Georgia to meet our team, introduce his business, and explore ideas together. Howe lives by example a lesson my Dad taught me years ago, “you show what’s important by how you spend your time.” This theme reoccurs throughout PalletOne’s history.

PalletOne has grown, in large part, through acquisitions. Over the past two years, I visited two dozen PalletOne manufacturing and in-woods operations. During this time, I heard several versions of “Well, Howe just showed up in our office one day to talk” and next thing they knew, they had agreed to terms with PalletOne. Again, you show what’s important by how you spend your time (and money).

Today, PalletOne is the largest manufacturer of new wood pallets in the U.S. The firm operates 17 locations in 9 states and manufactures new hardwood and softwood pallets, repairs and recycles used pallets and produces a range of other wood products. Across its operations, PalletOne employs over 1,500 people.

**Four Lessons from Pallets on Strategy and Competition**

When Mr. Market speaks, it’s not personal. Your business and investments either generate cash and earn profits, or they don’t. In timber and the forest products industry, the efficiency of how this message gets delivered varies up and down the supply chain, scaled in part by relative risk and insulated (in the case of forests) by time.

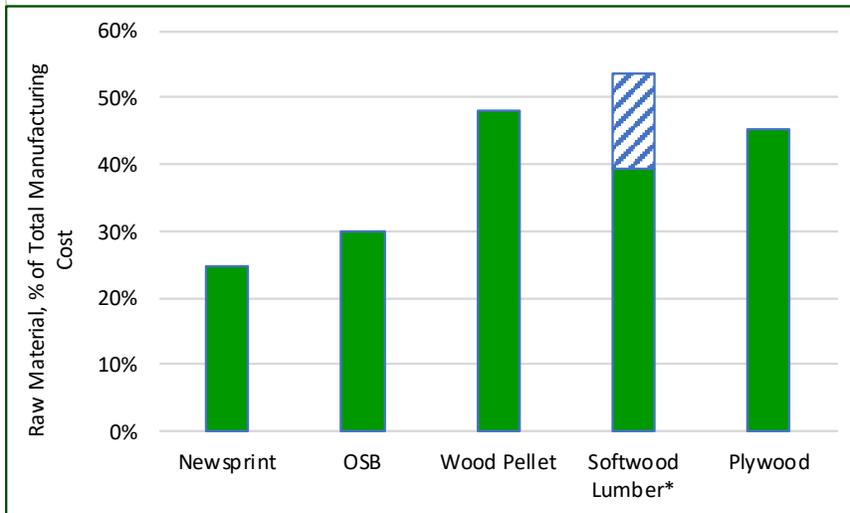
Therefore, financial success and sustainable profits in the wood pallet business, as in forestry, requires being good at math. If you failed arithmetic, forget the forest products industry. And while our time with PalletOne reinforced “the numbers,” it did not tell the entire story. Here are four lessons.

**One: Know Your Economic Place (in the Forest Industry Universe)**

Survival requires understanding your place in the forest industry universe at any given time. All forest products plants are subject to the supreme ability-to-pay for logs of the pulp and paper sector. While lumber and plywood and any product that requires sound, older logs pay more for their raw material on a per unit basis, pulp and paperboard plants have superior margins. Wood raw materials account for a smaller portion of their total manufacturing cost.

For pallets, wood accounts for 50-55% percent of the manufacturing cost. Figure 3 summarizes wood raw material costs as a percent for other sectors across the industry.

**Figure 3. Wood Raw Material as a % of Total Manufacturing Costs (U.S. South)**



\*Solid bar shows raw material cost for lumber net the value of residuals produced. Striped bar shows total delivered log cost as a percent of total manufacturing cost.  
Source: Q4 2018 Forisk Research Quarterly (FRQ)

PalletOne’s operations include four hardwood sawmills in four different states. The message here remains consistent across operations. Dorothy Hostetler, the General Manager of the Shipshewana, Indiana operations, explains it this way:

*“When studying accounting [in college], I read a paragraph which said most accounting for inventory is straightforward except for two businesses: **butchers and sawmills**, where grading is so important.”*

Wood pallets live on the low-grade side of softwood and hardwood lumber, and successful owners manage and understand that at all times. And Dorothy’s point speaks to both ends of the mill, where grades influence the value paid for logs coming in and the prices paid for boards going out, where you profit by optimizing the lumber on grade (quality) and value.

**Two: Invest to Maximize Advantages**

During Forisk’s 2018 *Wood Flows & Cash Flows* annual meeting in Atlanta, participants on the Executive Panel discussed the challenge of matching available capital to the best available

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projects and investments at any given time.<sup>3</sup> While the issues may differ for public and private firms, one clear theme included **the need for investments to deliver measurable results**. While noting the general point is obvious, the panelists emphasized a range of ways this could be achieved – from cash accretive to cost reduction to safety enhancements to production gains – and how these might change over time.

In the wood pallet industry, mills do invest, though selectively and sporadically. The realities imposed by the forest industry economics summarized in Lesson One narrow the focus while creating urgency and a need to look at things differently. Identify niches, underserved markets, and high-performing teams where specific opportunities exist to improve margins, grow market share and improve the overall positioning of the business for future growth.

Consider how PalletOne’s approach to capital investment balances internal improvements with external growth. In early 2017, the firm completed a multi-million-dollar expansion and upgrade at its Livermore Falls mill in Maine, which increased volume and provided margin improvement opportunities on both the cost and revenue sides. In late 2017, PalletOne announced its acquisition of North East Texas Pallet near Clarksville, which increased the firm’s footprint and market share near healthy pallet markets. And in mid-2018, the firm announced its Sunbelt Forest Ventures investment to build a greenfield sawmill in Selma, Alabama that will prioritize lumber for pallet manufacturing to further strengthen its supply security, margins and flexibility.

**Decisions about where to deploy limited capital produce winners and losers out of necessity.** The allocation of resources creates opportunities for managers. Executives do not want to send a message that says, “let’s invest here and neglect there.” For a PalletOne, the message is closer to, “given our budget and potential projects now, we invested *here*. So, what can we do to make things work *there* as best we can” until next year. When one mill gets capital and another one does not, you still expect that mill to perform. And that requires good people.

### ***Three: Have a People Strategy***

The topic of people consistently percolates through our research as a priority. Recently, this includes work on log hauling<sup>4</sup>, logging employment<sup>5</sup>, and business strategy<sup>6</sup>. Our study of PalletOne magnified the strategic importance of thinking hard about your people.

Within and beyond the forest products industry, hiring, developing and retaining talent is a differentiator. The competitive and economic pressures in the forest products sector, however, make plain the recruiting and development “return on investment” of treating people with respect, providing opportunity and reinforcing accountability. Any team with high turnover highlights organizational tensions that emanate from the top. This, in part, is what made the findings at PalletOne so illuminating.

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<sup>3</sup> The panelists – Brian Davis, CFO of CatchMark Timber Trust; Kevin Hudson, Senior Vice President at WestRock; and Jason Denton, Director of MetLife Timberland Finance Group – discussed “financing capital investments in the forest products industry.”

<sup>4</sup> “Feature Article: The Winding Roads of Log Truck Insurance” in Q3 2017 *FRQ* (pp. 15-18); “Employment Crunch in the Trucking Industry” in Q3 2018 *FRQ* (p. 36); “Haul Cost Sensitivities” in Q2 2018 *FRQ* (p. 40).

<sup>5</sup> “Logging Employment Declines” in Q1 2018 *FRQ* (pp. 37 & 39); “Logging Productivity in Canada” in Q4 2017 *FRQ* (p. 34).

<sup>6</sup> See *Forisk Strategy Notes*.

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PalletOne facilities know well the challenge of hiring and retaining employees. Mills from Hazlehurst (Georgia) to Livermore Falls (Maine) to Shipshewana (Indiana) to Siler City (North Carolina) could have each put 5 to 10 more people to work full-time.

PalletOne CEO Howe Wallace, Jr. talks about their ability to get the job done while continually short-handed. Unique among forest industry C-level executives, Howe did not work his way up through finance or operations. He served in staff, managerial and executive human resource (HR) roles at Ridge Pallets, PalEx and IFCO Systems. So, while PalletOne struggles to fill slots, they figured some things out with their core teams and supervisors. Howe said:

*“That’s a benefit of having an HR guy as CEO, right? We hug our guys a little bit, we value them. We don’t treat them like a ‘thing.’ And we tell them this. Some guys aren’t into that soft stuff, but over time, once guys have worked a few places, they buy into some. Look, we do care, and we’ve got to get the job done.”*

Easier said than done? Indeed. This approach comprises a daily practice that gets reflected and communicated in a recognition of how the world works. Folks are not sitting around looking for handouts, but they are looking for opportunities to contribute, for situations that treat and compensate them fairly, for the training required to be successful, and for respect, given and earned. At the end of the day, there is a job to do.

PalletOne has a people strategy out of necessity and as an executive priority. While the hardest roles to fill have been the entry-level, manual jobs that currently challenge firms across industries, PalletOne’s leadership and core operating teams at each plant have been in place for years. This has supported the firm’s growth and created development opportunities for individuals across the business.

#### ***Four: Develop a Mental Model for How Things Work***

We can all learn when walking through manufacturing plants and around forest operations with experienced managers and employees. These individuals have the knowledge and context to separate what matters from what does not during the course of the day. They have a model in their heads about how things work and what things look like when they are running well.

And, perhaps most importantly, they can share and communicate this framework with others to solve problems and improve performance. This is also true for senior executives.

PalletOne managers talk about how things work in structured ways. Jim Peterson in Hazelhurst talks about living in “the middle of the income statement” – where each expense line matters – and uses this structure to guide certain ideas. Donnie Isaacson directly applies process improvement approaches from “The Goal” by Eliyahu Goldratt. And CEO Howe Wallace has a mental model to talk through changes in the lumber and pallet industries.

Within Forisk, we use, for example, a “physical facts” mental model of North America’s softwood lumber industry. Lumber comes from regions that match available, accessible, and sustainable log supplies to ready, capitalized, and operating wood-using mills. As supplies constrict (e.g. Western Canada and the PNW) or expand (e.g. U.S. South), we can modify projections and expectations of regional lumber production in the short or long term.

The Q3 2018 Forisk Strategy Note includes another example that models and compares capital deployment options in timber-selling industries. Basically, we can summarize all traditional timberland investment strategies as efforts to match, model and exploit cash flows from wood

markets and forest supplies of varying levels of maturity over time (Figure 4). This mental model provides a way to compare, in the room, cases of established forests with mature wood markets, to opportunities that require development of the forests and/or wood markets.

**Figure 4. Timber Market Maturity for Investment**

Wood Markets (Demand)	Mature		
	Emerging		
		Juvenile	Established
Forest Inventories (Supply)			

Source: Q3 2018 Forisk Strategy Note

A mental model of how things work helps organize and share thinking. It provides a structure to talk with employees and communicate strategy and decide on the suitability of key partners. The model gives you something to test, consider, explore, and update as you attend meetings, read articles, and talk with colleagues. It becomes a receptacle for collecting and organizing ideas in ways that will directly affect the questions you ask others (and yourself).

**Conclusion: Strategic Implications**

Markets have the power allocate resources efficiently, given the incentives in place. However, we question the wisdom of markets to set priorities. That’s something different. Markets are agnostic. The lessons in this Note drive home, in direct and tangible ways, the strategic value of clear metrics, maintaining a framework and context for making decisions, and investing head space and resources into your teams.

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## Appendix A: About Forisk

Our team helps clients understand the business of forestry and changes over time in timber-related investments and wood-using industries from the ground up. All Forisk researchers have direct forest industry and market analysis experience. This includes work in wood procurement, forest finance, forest operations, and timber market forecasting.

Forisk publishes the *Forisk Research Quarterly (FRQ)*, which includes timber forecasts, forest industry analysis, forest operations research and wood market rankings for North America. In total, Forisk subscribers own or manage over 100 million acres of timberland and use over 200 million tons of wood per year in the U.S. and Canada. This includes firms and organizations based in the U.S., Canada, Europe, Asia and South America.

Our consulting focuses on analyzing the supply and demand characteristics of local wood and timber markets and, from this analysis, developing forecasts and strategic guidance related to investment decisions and the management of assets. To support this research, Forisk maintains the most complete databases of mill level capacity for solid wood-using mills in North America.

## Forisk Product and Services

- Products
  - *Forisk Research Quarterly (FRQ)*
  - North American Forest Industry Capacity, 2008-2020
  - North American Timberland Owners & Managers database
  - Silviculture Surveys
    - Forest management benchmarking for the US South and Pacific Northwest
  - Wood Bioenergy US database
- Services
  - Timber market and wood basket screening, ranking and feasibility analysis
  - Property and mill-specific timber price forecasts
    - Stumpage and delivered
  - Forest operations analysis and benchmarking
    - Wood procurement, market infrastructure and logging/hauling capacity
  - Executive education and professional development
- Events
  - “Applied Forest Finance” short course, February 19, 2019
  - “Timber Market Analysis” short course, Summer 2019
  - **3<sup>rd</sup> Annual “Wood Flows & Cash Flows” Conference**
    - **Save the date: December 5<sup>th</sup>, 2019 in Atlanta**

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