

Lumber Operation Logistics and Efficiency Modeling

Lumber Operation Logistics and Efficiency Modeling
MARCH 8, 2018 BY GLOBAL-ENERGY-GLOBAL-MICROTURBINE

The goal of any business is to maximize profits and minimize waste. Any other goal will put your operation in a hobby or non-profit type structure.

With that goal in mind, you need to figure out how to make the money, with the least amount of product, while generating the least amount of waste.

For our purposes here, waste is considered a no-value or expense item. Many sawmill and lumberyard residue can be sold for landscaping, fuel, or even secondary products such as wood pellets.

For all intensive purposes, a sawmill or lumber operation is in fact, a materials handling operation. The amount of time wood is being sawed is actually quite minimal considering the amount of handling the lumber goes through from felling to consumer.

With that in mind, an efficient operation will need to maximize on handling the lumber in the least time consuming manner, and one which will produce the least amount of damage to the product.

Lumber seems to spend a great deal of it's initial life stacked somewhere in the lumberyard. This is what we call "inventory" and is an asset which if not sold or "moved" is considered a liability or waste.

Reducing that "inventory" time factor will increase your bottom line. To reduce that time, you need to figure ways to (a) sell the product faster, (b) do not produce more than demand, or (c) produce the final product faster.

Of these options, producing the final product faster, can be done with installing a lumber dry kiln. Not only does a kiln reduce inventory time, but will generate additional profits by providing a stable and quality end-product. Many operations sell lumber green- which does reduce inventory time- but makes such little money that many sawmills cannot stay in business.

Some operations will contract dry the lumber by shipping the lumber to a dry kiln 50 miles away. This does help reduce time, but the time to ship the product and expense in trucking are waste, and cost money. Other operations will send small batches of wood to a larger kiln where the quality of the drying (in huge kilns with other species of wood) is questionable.

Having your own kiln can reduce inventory time, and produce your own quality product.

A perfectly efficient operation would have no inventory at all, and would produce lumber on-demand. In smaller operations this is simply not feasible. Log supply, fluctuating demand, weather, and other considerations make this option unlikely.

However, if you can find a reliable demand for your product, you can hone your efforts to produce for that demand, with out producing an over-supply. Finding a reliable demand might be working with a local building, flooring contractor, home renovation firm, or other business which will buy your product on a continual basis.

If you want to implement an efficiency model with your business, you need to make a list of (a) how is inventory related to demand, (b) what is the current waste stream, and, (c) how can the product be moved into sales faster.

When looking at efficiency, one is looking the the optimal way to do something. Or, looking at it from the other side, minimizing waste (whether that be time, money, or product).

An efficiency model will have a baseline- which is 100% efficient. Above that is overshooting, and below that is undershooting. You may think of it as a wave. You want to be in the middle of the wave for maximum efficiency.

Think of an jet landing on an aircraft carrier- if the jet comes in hot, he may overshoot the landing area, and if too slow, may undershoot the area. When a jet "calls the ball" he is right on a glideslope approach which will land him on the carrier.

This can be applied to just about anything. For example in a lumberyard cuts 40,000 Bf a month and of that 15,000 Bf is select hardwood. Mill "A" air dries lumber and has to inventory select hardwood for at least 6 months. In addition Mill "A" has some degrade from the slow drying. This mill also has to have covered storage for 90,000 Bf of lumber.

Mill "B" cuts the same amount of lumber, and installed a 15,000 BF dry kiln. The kiln charge takes one month to dry, so quality dried lumber is produced every 30 days. A covered storage building of 30,000 Bf is required (for incoming and outgoing lumber).

Let's now compare the two mills. Mill "A" has a greater inventory which means that he is sitting on money, and is losing at the very least the interest on that inventory. Mill "B" is producing a better quality product "kiln dried" and has relatively no inventory cost.

This scenario can be applied to just about any forest products business whose end product is a dried product. For example a firm which produces firewood must let the split-wood "season" for at least 8 months to a year.

Take that same wood and put it in a dry kiln and the split-wood can be ready in a matter of days. More important, the kiln-dried wood can be perceived by the customer as better quality from a stable and consistent moisture content standpoint, as well as the fact that the higher temperatures will kill most if not all insects that may be in the wood.

The efficiency model can be applied to machinery as well. In this case, it is a matter of applying usage, productivity and maintenance to provide optimum output.

The model can also be applied to lumber drying. You don't want to dry lumber too quickly or it will result in degrade or too slowly or you are looking at increased inventory time.

In conclusion, a sawmill or lumber operations owner is really a manager of maximizing profit and reducing waste, while reducing movements of materials. A lumber dry kiln can be a competitive advantage to provide a quality product and reduce inventory times.

1/15/2024
