

Lean Manufacturing for the Wood Products Industry

The Challenge

The wood products industry is one of the primary economic drivers for the Western Great Lakes region of Minnesota, Michigan, Iowa and Wisconsin, directly employing almost 350,000 people (42,000+ in Minnesota). This industry is experiencing tremendous economic pressures resulting from slow implementation of new technology and best manufacturing practices, imported products, restrictions in resource availability and global supplies of wood fiber. Significant U.S. production capacity and jobs have been lost during the past 5 years in the furniture, store fixture, flooring and cabinetry sectors.

The Solution

With funding provided by the National Science Foundation, the USDA CSREES and the USDA Forest Service, the University of Duluth's Natural Resources Research Institute (NRRI) and their cooperators have adapted and introduced lean manufacturing concepts for the wood products industry. Lean manufacturing is widely recognized as a core manufacturing strategy for all industries to improve competitiveness, resulting in significant productivity increases, cost reductions, lead time improvement and engagement of all employees in the continuous improvement process.

Resulting Benefits

- Lean training has been provided to over 200 companies and company specific continuous improvement projects have been facilitated with 17 companies resulting in project specific productivity improvements of 50-75%, cost reductions of 25-50%, and lead time reductions of 50-90%. The financial impact of these projects is estimated at over \$750,000.
- Additional training and projects are being conducted as wood product manufacturers become more aware of the benefits of lean manufacturing. The development of lean manufacturing strategies specifically for the wood products industry has increased the level of understanding and improved the rate of implementation.
- Additional activities have focused on developing and implementing lean manufacturing for forest harvesting, and primary wood product manufacturing to include sawmills, rough mills, and dry kiln operations.



Workshop participants are introduced to lean manufacturing concepts.



Creation of a new manufacturing cell resulting in increased productivity and reduced lead time.

- A new focus on total productive maintenance (TPM) is being developed to improve competitiveness for the industry.

Sharing Success

- Short courses and workshops have been developed and are ongoing throughout the Midwest and at the USDA Wood Education and Resource Center. A web presentation on lean production for wood products companies is available at: <https://umconnect.umn.edu/leansawmills/>
- New public agency partnerships have been formed with the USDA Forest Service, Virginia Tech, State Agencies (MN, MI, IA and WI) and manufacturing groups in the Great Lakes Region.



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