

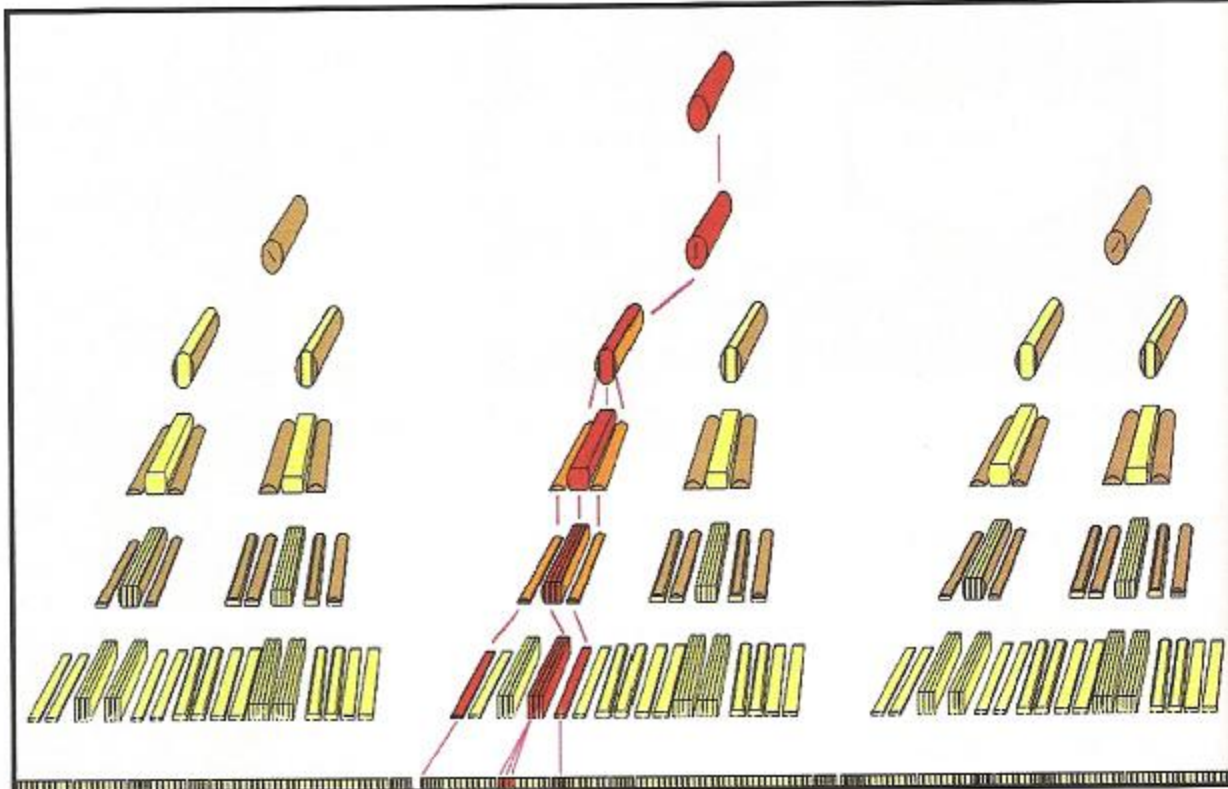
MEASURE THAT MATTERS

Optimization program refines operations planning.

Forest industry veterans often think of optimization as a better way to cut a log. In sawing optimization computer algorithms are employed in such a way as to maximize the volume or value of lumber from logs of varying characteristics. In bucking optimization a similar approach is employed to ensure that long logs are bucked into the best collection of segments. In business optimization the focus is optimizing the overall business rather than individual processes. The term for this kind of optimization is "Profit Optimization."

Profit optimization is a valuable technology for dynamic business environments. The greatest trend observed in the profit optimization field in recent years has been the desire to optimize larger business environments. The reason for this trend is the realization by sharp operators that they can capture synergies by optimizing multiple plants as a single business system. No conscientious manager wants to leave money on the table. Profit optimization yields insights that are not attainable by any other technology.

The new Optware-x system developed by Optware Solutions in Beaverton, Ore. offers a powerful optimization engine. The software allows managers to proactively plan and optimize activities across multiple mills by creating a virtual model of their business (forest-to-mill-to-market). The software works like a compass pointing out the collection of activities that will result in maximum profits. The new technology makes it practical to model complex multi-facility forest business environments and bring millions of dollars of additional profit to the bottom line by using all re-



Optware-x allows the analysis of many alternative process flows.

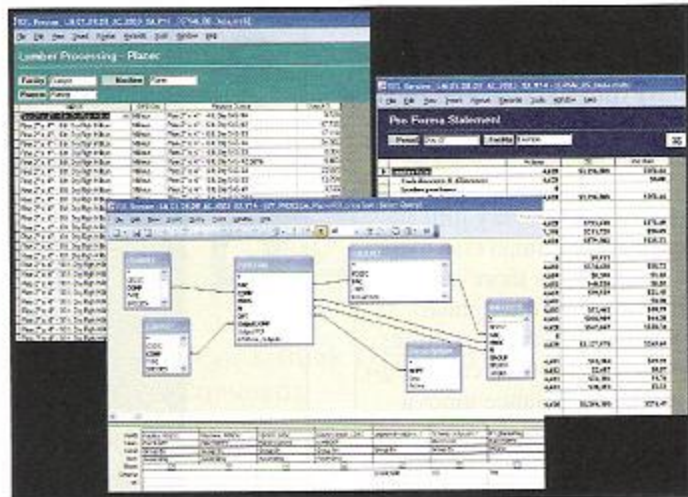
sources more effectively. Optware offers much more value than spreadsheet tools.

Optware-x is a PC-based system composed of a series of modeling building blocks that can be assembled to create a complete simulation of any forest products business environment. A model is a mathematical representation of a "real-world" system. It is an abstraction of reality. Linear programming is the underlying quantitative tool employed by Opt-

ware. The system is endowed with the internal "smarts" to understand how logs are converted to saleable products. The user populates the system database with information specific to his/her business operating environment.

Optware-x uses a modular design that allows a great deal of flexibility. The software is written to be compatible with Microsoft Office tools such as Microsoft Excel. Generically, the system is com-

posed of four basic components: the Windows XP interface, the database, the model, the optimizer and reports. The user interacts through the interface to access the database, to initiate runs and to review results. The database is the place where data is stored for retrieval. The model is the mathematical representation of the log supply, manufacturing and market environment. The model is easily customized to fit any company's specific operating environment. The user controls the model via the data that is entered into the database. The optimizer solves the equations that comprise the model in



Optimization modeling provides practical insights.

a structured way to find the very best combination of business activities as measured by profitability.

The Optware-x system is designed to refine the planning process. It is used to assist decision-making in a number of areas:

- Log procurement decisions (Which logs should we buy?)
- Log allocation decisions (Where should the logs that we harvest be sent for processing?)
- Log processing decisions (How should we convert the logs to maximize total return?)
- Changes in machinery (How much is it worth to increase the speed of the trim saw?)
- Operating policy review (Should we work an overtime shift?)
- Product mix planning (What products should we cut?)
- Curtailment/Consolidation (What is the impact if we close one of our mills?)
- Capital budgeting (What would be the result if we added a small log line to the mill?)
- Order allocation (Given our order file, at which mill should we manufacture each individual order?)

Optimization modeling provides practical insights as to the impact of log mix on the operation of a mill. The value that is liberated from a given log can vary tremendously by manufacturing facility and conversion option. Processing rates can also vary substantially by facility. The total cash impact is a combination of log mix, log cost, manufacturing cost, product value and productivity.

EXAMPLES

CMPC is a Chilean producer of lumber operating four sawmills. The mills employ a variety of sawing profiles that yield different mixes of lumber products from each log sort processed. The CMPC sawmills must decide in advance which log sizes and grades are needed at each mill in order to service diverse market needs. Traditionally the company used spreadsheets to evaluate possible log/product/mill combinations.

Profit optimization technology from Optware Solutions has provided CMPC with a competitive edge. The optimized answer can not be determined using simple arithmetic. In many cases the optimized answer is worth hundreds of thousands of dollars more per month than the spreadsheet answer. The powerful optimizer within the Optware system is able to comprehensively assess millions of

combinations of activity before selecting the very best option. Implementing optimized operating plans has boosted the company's bottom line significantly.

Profit optimization is particularly valuable during times of change. A West Coast Optware user recently related how its Optware system has shown that rising chip prices should influence cutting strategy more substantially than it has traditionally. The "compass" indicated that recovery is less valuable in the current market indicating that they should cut

more square edge lumber out of selected logs even though the result is lower recovery. The change, when implemented, turned red ink to black. The "sweet spot" as to how to run a mill often varies with changing lumber prices, log costs and manufacturing options. To maximize company-wide profits it is necessary to use a tool that considers all of the trade-offs on a continuous basis in a comprehensive and objective manner. **T**

This article was submitted by Optware Solutions LLC, 503-690-2598.



OUR PLEDGE

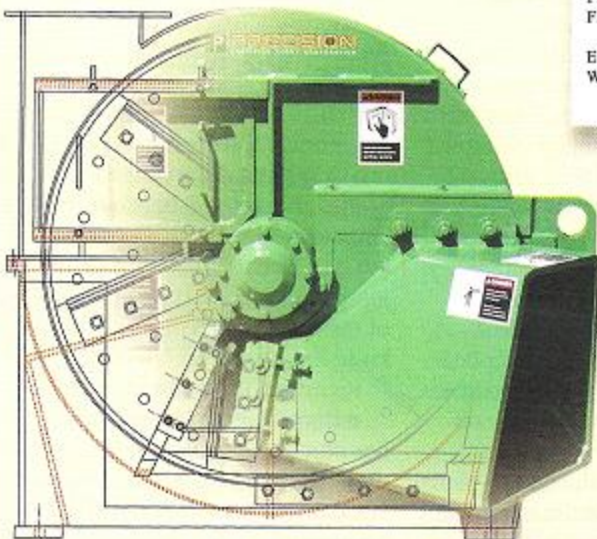
To produce the most cost effective equipment for the best utilization of our earth's only renewable, recyclable and biodegradable natural resource - wood.

Contact Information

Precision Husky Corporation
P.O. Drawer 507
Leeds, Alabama, USA 35094

Phone (205) 640-5181
Fax: (205) 640-1147

Email: sales@precisionhusky.com
Web: www.precisionhusky.com



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