



WSO™ – Production Planning Optimization

**Maximize recovery? Maximize production? Premium products?
How about... Maximize profit!**

Like most companies, you've invested millions in machine center optimizers throughout your mill. **But does that mean your operations are truly optimal?** In most cases the answer is no.

Machine center optimizers give you the power to control production mix, and also mill flow. But to do so, they must be configured with appropriate parameters - primarily "decision values" and processing "penalty costs". Until now, mills have - at best - generated these key parameters on an "ad hoc" basis. The result is that most mills operate at a substantially sub-optimal level.

To address this issue, HALCO has developed the WSO™ Production Planning Optimization system. WSO™ determines:

1. The optimum production mix, based on current market prices, min/max sales mix constraints, and process flow bottlenecks; and
2. The machine center optimizer parameters to produce this mix.

The WSO™ System

WSO™ combines HALCO's SAWSIM® program with linear programming optimization in a proprietary iterative technique, to determine optimum production plans and machine center optimizer parameters.

The primary inputs to WSO™ are:

1. Min/max production volume constraints, by product or "product mix"
2. Current lumber and byproduct prices
3. Expected log mix for the production run
4. Production rate and cost data, both in the sawmill and in downstream processing

**You've got the Optimizers...
Now make sure they're truly
Optimizing!**

From these inputs, WSO™ determines:

1. The optimum (most profitable) production mix
2. The machine center optimizer parameters required to produce that mix:
 - The optimizer "decision values"
 - Optimization "penalty costs", such as edging penalties. Using penalty costs is key to relieving bottlenecks; WSO™ finds the costs that maximize profit by resolving the trade-off between throughput and value.
3. Sales target feedback to the marketing department

WSO™ Benefits

WSO™ benefits come from:

- Increased sales average, through an improved size/length mix and optimized "program sales" volumes
- Increased production rate
- Perhaps increased recovery (overrun)
- Reduced inventory holding and "inventory clear-out discount" costs, by producing a lumber mix that matches existing sales commitments, and "closing the loop" between sales and production for future sales
- Increased customer satisfaction, through improved on-time deliveries.