

# Synchronous Solutions

*The continuous pursuit of excellence*

## ***Waste is a waste...of time, effort and money***

*“Profits found ‘Lying’ on the shop floor”*

**Waste** is defined as to consume, spend, or employ uselessly or without adequate return. To use to no profit or opportunity. To squander.

In all businesses, waste comes in many forms. We often think of wasted materials like caulk, razor blades, adhesive tips, sanding pads, etc. on the shop floor. In fact, the list is very long.

In the fabrication business, labor and materials are the two highest items of expense. Depending on the company and its use of automated equipment, labor should amount to about 30% to 35% of sales. Combined labor and overhead, which we call Operating Expense, should be less than 50% of sales. Materials, including inbound freight, should be less than 35% of sales. Obviously, you would want to assure that every penny you spend on those items would be used effectively with minimal waste.

### **Material Utilization**

For material utilization, the objective is to increase *yield* (which is the opposite of waste). Making the best use of materials begins with programming to “nest” the parts as tightly as possible to minimize waste. Recuts can be a huge item of waste as you utilize more material than planned due to some mistake or faulty material. Every piece of material that goes into the dumpster is costing you just as much as the parts you cut for the products you make.

An excellent opportunity to increase yield is the effective use of remnants, which takes a bit of effort. Remnants can accumulate to the point that you just don't have room for more, so you clean them out (and start accumulating yet again). A simple approach is the “half slab rule.” If a cut job results in a half-slab remnant or larger, it goes into inventory *with value* at the cost you originally paid. Obviously, a remnant with value would be a priority for use if it will color-match. Material handlers should be encouraged and held accountable for using those remnants. Remnant of less than half-slab size, but large enough to be used for a vanity, should go back into inventory *without value*. They are the second priority for use. Remnants not large enough for a vanity, should be discarded. In any case, at least once a quarter, you should review the remnant inventory and decide what needs to be retained and what needs to be discarded. When you wait until you run out of room, you make the task more difficult and you are likely to discard something that could be of value.

As noted, this is a simple approach and seems to work well. There are more sophisticated methods that can be more effective if you choose to commit to the administration. Another point to consider is that there is a difference between a Purchasing Agent and a Materials Manager. The former is nothing but a buyer. A Materials Manager is a much bigger job and is normally responsible for purchasing and inventory control.



## Labor Utilization

After material costs, the next largest expenditure for a fabricator is labor. With the increased use of automated equipment, the pure labor cost can be reduced but the waste can become even more dramatic because you may not be effectively using the investment in that expensive equipment.

Wasted labor and equipment utilization can come in many forms:

- **Over production.** Producing more at some process step that is already ahead of schedule is not an effective operational technique. This leads to **excessive inventory** which is often needs to be moved to get to the needed inventory, which adds to labor costs and makes it more likely to be damaged. Excessive inventory is expensive. Investment in idle materials is not making you any money. It is not always good to be ahead of schedule. In fact, it is better to produce inefficiently that which you do need than to produce efficiently that which you do not need. Moreover, the labor capacity utilized to produce excessive inventory is still needed to produce the required inventory. This is classic waste.

**It is better to produce *inefficiency* that which you do need than to produce *efficiently* that which you do not need.**

- **Waiting.** Timing is also critical. An effectively managed fabrication shop assures a consistent **flow of information and materials**, both of which are important. Waves of jobs moving through the plant is a sign of operational waste. Waiting on needed information or material is a waste.
- **Unnecessary transportation.** A properly designed shop layout can lead to greater productivity overall. Generally, equipment should be staged to accommodate a short travel between stations in a sequential layout. Sometimes, growth with new equipment could mean that the new machine must be positioned where there is room rather than the ideal sequential flow location. A smart approach to address this is the use of mobile worktables rather than dry-wall carts or A-frames. The amount of material handling can be drastically reduced with this approach.
- **Poor quality.** Obviously, any part that must be remade or repaired is a waste. See “Quality at the Source” in the July edition of the Slippery Rock Gazette.

**The opportunity to reduce costs is finite. The opportunity to increase *throughput* is infinite.**

## Having said all that...

So, waste is bad, either in material or labor. Waste in any of its forms will increase costs, which should be a “red flag” for every manager. Sales minus costs equals profits. We would expect every business leader to be aware of costs and routinely strive to reduce them in order to increase profits.

## Value Added

However, it is important to note that the opportunity to reduce costs is finite, whereas the opportunity to increase value added is infinite. If your ultimate goal in business is to reduce costs, you should lock the doors, because that is the sure method to achieve the lowest cost of operations.

While you should be good stewards of your operating expenses, you should give the greatest priority of your attention to creating more value, aka *Throughput*. We define ***Throughput*** as “the measure of value added.” Essentially, every manufacturer converts an investment in raw materials into finished products. That conversion is measured as ***Throughput***, which is expressed as \$T. There is no limit to how much \$T you can create. Greater productivity is accomplished by working on the right things at the right time. See “Throughput Accounting” in the April 2019 edition of the Slippery Rock Gazette.

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