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# The Productivity Payoff

How Engineered Labor Standards  
Can Boost Efficiency And Cut Costs  
Without Sacrificing Quality



## Presented by ASW Global LLC

Hidden inefficiencies in warehouses and distribution centers that waste time and money frequently result from the labor environment and the ways tasks are performed.

For example, poor pick route planning can result in wasted movement as workers make their way around the warehouse, leading to lost productivity and increased employee stress. Simple oversights — such as pallets of materials routinely being delivered to the door farthest from where items will be warehoused — force employees to expend extra time and energy moving goods. Without a detailed understanding of what’s involved in each aspect of a task, managers are limited to rules of thumb and intuition when designing and tuning warehouse layout and SKU assignments, says John Vande Vate, Ph.D., founder and executive director of The Georgia Institute of Technology’s Executive Master’s in International Logistics and Supply Chain Strategy program.

These details add up, and productivity pays the price.

Establishing engineered labor standards can eliminate inefficiencies that strain resources and reduce profit margins. Establishing engineered standards based on hard data streamlines processes by pinpointing bottlenecks, eliminating redundancies, curbing wasted effort, boosting morale, improving customer service and increasing overall work production.

How do you know if you are maximizing performance if you aren’t measuring it?

### **WHAT ARE ENGINEERED LABOR STANDARDS?**

Engineered labor standards are designed to pinpoint the most efficient way to perform a task without compromising safety or quality. They assist in defining the most efficient processes to complete a task, and steps include profiling your products to design an appropriate layout, establishing product slotting to minimize travel time and installing engineered standards to best address the synchronized flow of material. The concept of engineered labor standards dates to the late 1800s, when American engineer Frank Bunker Gilbreth pioneered time-and-motion studies to eliminate waste, conserve worker effort and reduce business costs in the construction industry. His innovative approach eliminated unnecessary stooping, walking and reaching, yielded a 75 percent reduction in the number of motions needed to lay a single brick (from 18 movements to 4.5) and nearly tripled the number of bricks laid per hour (from 125 to 350).

“Decomposing a task into its separate steps, and quantifying the time and effort involved in each, facilitates the process of finding better ways to perform that task,” Vande Vate says.

Most companies base worker productivity and output expectations on historical data, negotiated labor agreements or the performance of a small number of high-achieving employees. They fail to measure what employees are truly capable of accomplishing based on the capabilities of the system as a whole.

And without a detailed model of how orders translate into work, managers have a limited ability to project appropriate staffing levels and estimate when work will be complete, Vande Vate says. Instead, they simply see what gets done — and what doesn't — and make delivery, equipment or staffing adjustments accordingly. However, that's neither efficient nor cost effective, and no business should run that way.

Today, this strategy for analyzing and timing the mechanics of individual tasks to improve productivity has been expanded to a variety of industries, processes and jobs, including those in the automotive industry, warehousing, retail and distribution centers.

## HOW AND WHY THEY WORK

**H** Robert Glenn Sims, chief operating officer of ASW Global LLC, a supply chain management and third-party logistics company based in Northeast Ohio, has seen firsthand the benefits of using engineered labor standards. By applying a proprietary operating system using these principles in two of his company's largest distribution centers, Sims has realized double-digit improvements in five key areas, including a 40 percent reduction in overtime hours.

Total productivity has jumped 11 percent and facility space utilization has improved 15 percent in the past year and a half. The company saw improvements in costs, utilities and equipment utilization, and the engineered standards have improved accountability at all levels of the organization.

Vande Vate outlines four compelling reasons to consider implementing engineered labor standards.

1. **Fairness.** Engineered labor standards provide a tool for quantifying what managers know intuitively but workers learn from experience: Different jobs have different levels of work. Armed with detailed knowledge, managers can structure, measure and compensate tasks more appropriately, reducing envy, resentment and confrontation, and improving morale and productivity.

2. **Productivity.** Basing engineered standards on historical performance puts workers in control of the production pace. Engineered standards give management control over productivity, and by setting standards that are challenging, yet fair and achievable, managers can raise and maintain productivity levels.

3. **Design.** Industrial engineers can employ engineered labor standards to fine-tune the design and organization of the warehouse in ways that can dramatically reduce the overall work, Vande Vate says. Changing the layout, reslotting, implementing forward pick areas and adjusting ways in which orders are released to the warehouse can help boost productivity.



4. **Scheduling and management.** Engineered labor standards allow management to more accurately estimate the time and effort needed to complete future work orders. This lets managers plan, schedule and commit to customers more reliably, reducing overtime and idleness while improving customer satisfaction. For third-party operations, engineered labor standards can help with understanding the difference in the costs of services and building better bids.

## **S**ETTING A NEW STANDARD

In large logistics centers that ship thousands of pallets of materials weekly and operate 362 days a year, small workflow adjustments can have a large impact. Sims used that standard as guidance when he applied engineered labor standards as a continuous improvement opportunity for ASW's two major facilities serving the Midwest.

The first step in designing the ASW proprietary operating system was analyzing the physical layout of both distribution centers and determining where they could optimize layout for the best utilization of people, equipment and buildings.

“We had to clearly define our material flow process as part of our operating system — from when an order is issued, to when the material is delivered, to how it moves through the facility, gets loaded into the truck and delivered to the end customer,” Sims says. “We needed to go through that synchronized workflow and understand every assignment within that workflow to look for ways to improve.”

Were deliveries being unloaded in appropriate locations? Were forklift routes intersecting to create a safety hazard? Were pallets stacked too high? Sims determined that some processes were good. But he discovered that it's not just the material flow that matters; the types of material, their weight and travel distance need to be taken into consideration, as well.

Every task had to be broken into individual motions and analyzed for maximum efficiency in getting items from Point A to Point B.

The engineered standards were completed using a scientific method to define



what's physically possible, taking into consideration surrounding variables and constraints. ASW did not want to drive improvements on the backs of its associates, so when it reached the data collection phase, it talked to employees about how it was considering the overall layout to improve productivity.

In each step, the company sought employee feedback. While the company may think heavy loads that go out need to be at one corner of the building, employees may think they need to be closer to the center; be receptive if someone has a valid reason why your idea is not reasonable. Once data was collected and specifics defined, the company conducted time studies to determine how long it took to complete each task and move items most efficiently throughout the distribution centers. Because the proprietary operations system is data driven, simulations can be run dynamically by plugging in data and watching as materials flow through the facilities. ASW, for example, had to consider equipment usage, because a forklift is limited in speed and amount of material transported.

Once simulations show results you feel are achievable, attempt a dry run in the facility to ensure that you haven't missed any details. This is a check-as-you-go process to make sure you're getting each and every step, Sims says.

When you are ready to implement the new engineered standards across the work floor, track employee performance to ensure expectations aren't off the mark. ASW, for example, gave people three to six months to get up to speed. In that time frame, if 85 to 90 percent of people are meeting the engineered standard, the goals are achievable.

Vande Vate says employees usually warm to engineered labor standards when they're involved in the process and the standards are properly implemented. By making work more predictable, companies can make employees' lives easier and happier. Improved staffing can reduce reliance on temp workers and reduce emergency overtime. In the best cases, some savings — especially reductions in overtime — can be shared with employees in more regular, predictable, visible and productive ways.



## THE BOTTOM LINE

Tracking wasted time is not like tracking wasted resources. Unless you implement ways to measure the optimum output your operating system is capable of generating, you'll never know how much time — and profit — you're wasting. And if you're running an operation where there are multiple people and equipment, there is no doubt there is room for engineered standards as part of an efficient operating system.

Higher-volume operations often stand to benefit the most from data-based engineered standards, as larger operations can see significant savings from small improvements in productivity. For example, if UPS shaved a penny off the cost of handling each of nearly 16 million parcels each day, annual savings would be nearly \$60 million.

Even in an industry such as health care, measurable engineered standards can be established as part of an operations system. It's simply a matter of finding that starting point. When you look at optimizing, you have to optimize using data, and standards are data.

Knowing what data say your employees — and your facility — can do gives everyone more motivation to achieve.

At ASW, the biggest hurdle was getting employees accustomed to working with engineered standards and understanding their capabilities. But with that hurdle cleared, the company's proprietary operating system has produced positive, measurable results.

Sims has seen an 8.5 percent per hour improvement in the handling of pallets at its two main distribution centers, resulting in a 12 percent operating cost improvement for pallets being shipped within six to nine months.

Engineered standards simplify your organization. Clear expectations drive productivity, safety and quality improvements, giving you visibility into what's happening inside your operation, allowing you to price to a standard and know you can achieve it, creating for continuous improvement in your organization.

*To learn more about ASW's operating system and how engineered labor standards can help your business, contact us at (888) 363-8492.*