



White Paper

The Secrets of Applying Lean to Distribution Operations

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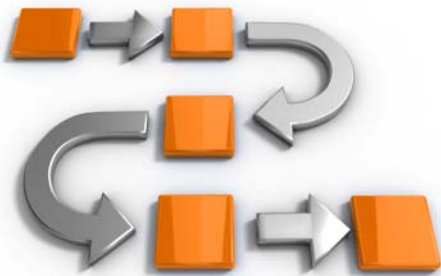
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Apply Lean Principles in your Distribution Operation

In 2007, a major U.S. big box retailer implemented “lean” across its network of distribution centers. Within a year, and coupled with a full labor management implementation, the retailer realized \$1 million in savings at each facility--and annually thereafter. Impressive -- but not uncommon.

Typically, companies that implement lean in their distribution centers (DCs) can expect to see a 10 to 20 percent increase in productivity. Improvements as high as 30 to 50 percent are not unusual with a comprehensive labor management program that includes lean, engineered labor standards, labor management software and incentives.

Numbers like these are quick to grab senior management's attention – especially in a volatile economy, when businesses across every sector are scrambling to reduce costs, do more with less and preserve profits. That's why a small but growing cadre of leading companies has begun applying the concepts of lean to their distribution operations. But just what is lean distribution and how does it work in the supply chain environment? And what are the secrets of success when lean-ing out distribution operations?



Six Secrets of Success

1. Don't assume your supervisors and managers are experts on lean processes and change management.
2. Involve the associates in process improvements.
3. Don't assume associates always know about or comply with best practices and SOPs.
4. Involve management in observing DC processes first-hand, on the floor.
5. Don't underestimate the impact of your WMS on lean distribution, but, by the same token, don't let systems alone drive DC processes.
6. Measure the before and after. Measure a legacy activity or process to establish a baseline. Then measure again, once change has been implemented.

Lean Distribution Defined

Lean distribution is based on the tenets of lean manufacturing. The lean philosophy, which grew out of Toyota's production management approach, considers the expenditure of resources for any goal other than creating value for the end customer to be wasteful, and thus a target for elimination. Working from the perspective of the customer who consumes a product or service, value is defined as any action or process for which a customer would be willing to pay. Basically, the goal of any lean methodology is to create *more value with less work*.

In distribution operations, the lean philosophy begins with the customer order. The approach applies tools and techniques to streamline and accelerate material flow, reduce errors, eliminate unnecessary handling, maximize facility utilization and improve inventory management.

However, applying lean in a distribution environment is not necessarily a simple matter because of one critical element – variability. Mass production processes, by nature, are both consistent and repetitive. Distribution processes are not. In fact, distribution operations are just the opposite -- highly fluid. Customer orders vary by size, content, product mix, time sensitivity and a host of other variables. Thus, the work required to fulfill orders is individualized by order. This variability creates challenges when applying lean concepts in distribution. But by following the step-by-step process outlined below, these challenges can be overcome – with significant results.

Four Steps of Implementation

Lean distribution is all about improving productivity. A fully developed lean distribution system is constructed on three foundational areas: process analysis and reengineering, engineered labor standards and performance measurement, and incentives.

Given this basis, the process for successfully implementing lean distribution can be broken down into four steps. Follow the steps faithfully and you will reap maximum reward. Skip a step, and you'll leave money on the table.

Step 1: Establish goals, objectives, policies

At the outset of a lean reengineering project, management must define the goals and objectives of the effort as well as the policies that will govern it. This typically is accomplished in a workshop setting, where managers from different areas of the company -- human resources, operations, engineering, finance and information technology – brainstorm these issues.

The group also defines how the company will run the lean program, and how it will “brand” it across the organization. Group members devise a change management framework, which includes developing a communications plan with messaging that clearly defines what the program is, sets expectations, and “sells” it to associates.

Four Steps of Implementing Lean Principles

Step 2: Assess Current Processes

Once the overall project is designed and a change management plan in place, the next step is to lean out every process in the DC. This means assessing individual processes down to the *element* level with the intent of eliminating waste and streamlining. It involves observing and understanding existing work flows. Processes are mapped and broken down into two components – procedures and methods.

Procedures represent best practices – i.e., how you best perform the job or task. Methods are the little things you can do to enhance your productivity or performance. If you're an order picker, for example, your job is to go to a given location, pick five units and put them in a carton. The procedure is for the order picker to pick the five pieces. However, the worker can elect to grab five at one time from the bin, or put his hand in the bin five times and pick one item at a time. If the worker can do the former, he is more efficient – less physical motion/labor expended. Such small method efficiencies add up to a more productive associate.

The goal of the workflow analysis is to identify waste and eliminate it. From this study, the company can then develop better procedures and methods. During the workflow analysis, the DC should baseline its operation – i.e., measure current output using key metrics. This baseline provides a benchmark against which to compare post-implementation improvements.

At the heart of this workflow analysis is a thorough understanding of process. While this sounds like an obvious statement, the reality of most distribution center operations is that managers and supervisors lack this understanding at the finite level required to succeed with lean. They focus on managing the workload and may not step back to fully assess exactly why associates are not as productive as they could be.

Unproductive processes are not intentional. In most DCs, workflows evolve gradually and piecemeal over time, with changes layered on top of legacy practices.

It is critical to involve associates in the process assessment. Conduct structured brainstorming sessions with them about how to do things better. Not only does this generate great ideas, it encourages associate buy-in by giving them a sense of ownership of the outcome. Such buy-in is essential to the success of the lean program.

Once each process is analyzed and leaned out, document and flow chart it. This documentation provides the foundation for labor engineering. It also memorializes the processes, which helps in consistent training and roll-out. The company creates two sets of standard operating procedures – one for the DC manager, which includes all detail, and one for associates, which are simplified for use in training.

The company uses the latter – the “training version” of the SOPs -- to educate associates on how to do their job most effectively under the new procedures. These abridged SOPs essentially summarize for associates the keys to success in “beating” the engineered standard.

Four Steps of Implementing Lean Principles

Associates must be thoroughly trained and supported in learning and using the new SOPs. This training is critical to the success of the lean effort, and must be completed prior to launching the next phase of the project – engineered studies.

Step 3: Conduct engineered studies

Step 3 in the journey to lean distribution involves conducting engineered studies on associates as they perform their reengineered work tasks. These studies form the basis for engineered labor standards and incentives.

Labor productivity standards must be developed only after DC processes are analyzed and leaned out. Companies often make the mistake of establishing labor standards without first analyzing whether the work flows and processes are the best they could be. They simply go ahead and develop standards based on inefficient processes.

This sets the system up for failure, however, because measurement results end up being too erratic. For example, because of poor processes, a worker could perform at 120 percent of the standard one day, and 80 percent the next. This variability makes it appear that the associate is not doing his job when in fact, the poor process is to blame for the performance anomaly. In such situations, associates quickly grow to dislike the labor standards because they view them as unfair and unworkable. The goal should be to develop standards that reflect the associates' level of effort, regardless of the process, operation or department.

Concurrently with the development of labor standards, the company should train managers and supervisors in effective coaching and feedback techniques. Supervisors should be educated on how to perform on-the-floor observations, how to teach associates about performing to standard, how to give additional training to people who are struggling to meet the standard, and so on.

One other important note with regard to revised processes and labor standards -- it is beneficial if they are developed in concert with configuring the warehouse management system (WMS) and its labor management solution (LMS) component, especially if WMS to LMS system integration is desired.

Many companies' distribution processes were born from the software they built/use to run their warehouse. This means, in effect, that a business is permitting its software vendor to dictate its DC work processes.

Instead, a lean overhaul should be designed and implemented in advance of and right alongside of DC software development. The WMS should support, not determine, operational best practices.

Step 4: Add Incentives

To maximize the benefits of lean distribution, add incentives to the mix to reward associates for high levels of performance. Incentive programs should be accountability-based, meaning workers are responsible for hitting the labor standard and earn incentives for exceeding it. Such programs should offer a variety of benefits beyond “pay-for-performance”, which can include recognition programs, non-monetary rewards and time off. The program also should offer incentives to individuals, teams, and departments and be as inclusive as possible. In most cases, creatively structured incentive programs can include all DC associates.

Six Secrets to Success

Lean distribution is not rocket science. It is very straightforward, common sense stuff. And the good news is that organizations can implement it in stages, starting with reengineering processes, and reap immediate benefits with each phase.

But while lean distribution is based on common sense, that doesn't mean it's necessarily easy to implement. In fact, successful implementation of lean is hard work. There are no short cuts.

Here are six secrets of success often overlooked by companies:

1. Don't assume your supervisors and managers are experts on lean processes and change management. This is rarely the case. Both groups require training in all aspects of lean – from initial concepts and day-to-day workflow execution, to people and change management.
2. Involve the associates in process improvements. Enlist their help in identifying opportunities to work better and smarter. Associates know best what works, what doesn't, and how to improve what doesn't work. They usually know how to “work smarter, not harder”.
3. Don't assume associates always know about or comply with best practices and SOPs. Although companies may post SOPs, they often fail to educate and train associates about them, and to integrate them into the work on a day-to-day basis. Here again, education, training and sustained reinforcement are key to keeping SOPs in practice.
4. Involve management in observing DC processes first-hand, on the floor. Train management – including floor supervisors -- in how to observe and provide them with checklists to use as tools to frame their observation. Send them out on the floor, equipped with these checklists, to observe the work being done by individuals. In this way, management will truly understand the processes involved in filling a customer's order, from start to finish. This knowledge creates the critical foundation for better management.
5. Don't underestimate the impact of your WMS on lean distribution, but, by the same token, don't let systems alone drive DC processes. The WMS and LMS should be configured in concert with development of lean processes.

Reaping the Benefits

6. Measure the before and after. Measure a legacy activity or process to establish a baseline. Then measure again, once change has been implemented. Curiously, companies often neglect this step. Direct comparative measurement of outcomes is the only way to know whether a process has improved – or is simply different than before.

Reaping the Benefits

Lean distribution bears immediate fruit – both tangible and intangible. The benefits are straightforward and significant:

- ◆ A 10 to 50 percent improvement in labor productivity
- ◆ Smoother and more accelerated product and work flows
- ◆ Happier and more productive associates, which improves retention
- ◆ More capable management team
- ◆ Greater facility throughput and capacity
- ◆ Avoidance of major capital outlays – i.e., not having to build a new DC to handle incremental growth.

As in the case of the major big box retailer cited at the outset of this article, the potential savings derived from applying lean to distribution operations run into the millions of dollars.

The bottom line: By implementing lean, you end up with a much better managed distribution operation.

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