



# LABOR MANAGEMENT SYSTEMS (LMS): AN ENGINEERED STANDARDS APPROACH

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Whitepaper written by:

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As you look out onto the floor of your distribution center, you might be wondering, “Everyone seems to be working hard and at a good pace, and ultimately units are moving out of the building, so it couldn’t be that bad, right?” But, have you ever wondered, “Do I really know what the associates are doing specifically?” “Are they assigned to value adding tasks, or are they simply being given ‘busy work’?” One will naturally arrive at these questions upon taking their analysis a step further. The answer to this question is nearly impossible to figure out without access to better tools providing visibility. You ask the supervisor, and they inform you of the activities of the associates in their department. However, you still have many questions, such as, “Are the associates being nearly as efficient at the tasks as possible?” “How long should it be taking them to do the tasks in the first place?” “Are all associates being ‘judged’ fairly in comparison with one another?”

All of these questions, as well as many more, are answered through the implementation of a Labor Management System using Engineered Labor Standards. As you will discover through the questions and answers below, as well as the details provided thereafter, Engineered Labor Standards, and specifically Time and Motion Studies make it possible to accurately represent all of the hard work that the associates perform, making it a win-win for both the associates and the company.

### **What are Engineered Labor Standards?**

An Engineered Labor Standard determines the expected amount of time that is needed by a trained associate to accomplish tasks that produce a measurable output (typically in units, cases, pallets, etc.). Engineered Labor Standards assume that the associate follows the process for producing the output that has been fully defined and optimized. Additionally, it is assumed that the associate is working at an acceptable pace and with all unavoidable delays considered, at the level of quality that is expected, while being supported by a supervisor.

### **How do Engineered Labor Standards compare to Master Standard Data?**

Engineered Labor Standards utilize time and motion studies, which involve the methodical process of observing the associates, including their motions, in the specific environment that the engineered standards are being developed for, under the same conditions that the associates and the building will experience while actually performing the tasks. Another process used for developing Engineered Standards entails the use of Master Standard Data and applying pre-established, industry standard times for each task that the associate performs.

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### The process of creating Engineered Standards through Time & Motion studies:

#### Why is all of this important? What does it do for me and my company?

Engineered Labor Standards equip you with the tools needed in order to gain detailed insight into the tasks that the associates are performing, whether they are value added tasks or amount of idle time, as well as a department level and overall building level snapshot of associate performance and throughput. As a result, they drive efficiencies in the operation, since individuals are typically provided feedback on performance at time intervals of management's choosing, ranging from every few hours, to daily, to even weekly. The frequency of feedback is driven by the category in which the feedback is being given. This drives productivity up through continuous guidance from the leadership.

#### Which kinds of companies can benefit from Engineered Labor Standards?

Any company that operates a Distribution Center, Fulfillment Center, or a Manufacturing facility can benefit significantly from Engineered Labor Standards.

Before we discuss Time and Motion Studies in more detail, let us begin with the preparation needed, including the steps required before time studies can begin.

The first phase in the process is identifying and then quantifying Process Improvements. These Process Improvements typically identify procedural or safety related changes, as well as other types of improvements that often lead to large savings for the facility. An example that often presents itself is the Lean Six Sigma improvement concept of 5S. This is a methodology that consists of Sort, Straighten, Shine, Standardize, and Sustain. Depending upon the level at which these have been implemented and sustained, there are varying degrees of improvements that can be made, such as labeling supplies storage areas and clearing protruding material from walking aisles.

An example of using 5S to produce operating savings for a company is by reducing the learning curve and tribal knowledge utilized by seasoned associates. New associates can make use of properly displayed signage to locate areas and obtain and put away equipment. As an added benefit, there are often safety benefits that accompany the Process Improvements such as installing lights that provide associates with the ability to improve visibility inside a receiving or shipping trailer.

The quantification of the Process Improvement varies based on what it contains. It can be a productivity improvement, reduction in touches, or reduced travel to accomplish the same

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task. The savings can be anywhere from a few thousand dollars in a year to hundreds of thousands of dollars in a year. The required capital investment, a list of benefits, and an action plan should accompany the process improvements. This allows leadership to gain a holistic picture of the improvements and get a jump start on implementing them.

Once the Process Improvements are identified and implemented, the second phase begins, which involves developing Preferred Methods. Preferred Methods are the desired steps that an associate should perform to accomplish a given task in the most productive manner. An example of this is “Obtain Hand Truck,” “Pick-Up Item Using Hand Truck,” and “Place Item onto Lift.” Each step has a title as seen in the example above and a description that provides insight into what the step entails.

In order to establish the Preferred Methods, the current process utilized in each area of the facility is observed, and those steps are recorded separately for each area. Then, the steps are discussed with supervisors of those respective areas, as well as management to confirm that these are indeed the Preferred Methods.

Once the Preferred Methods have been established, we are ready to begin the third phase of the project, which is creating Time and Motion Studies. Time Studies are observations consisting of timing the various associates performing all of the tasks associated with the defined process. Various experience levels are observed, from associates who have just enough experience in their role, preferably six months or more, to perform the expected work tasks without any guidance or supervision to someone who has been in the role for decades.

Time and Motion Studies are typically completed using tablets. The tablet will utilize a program containing a template the Industrial Engineers create that includes all the steps listed for each area. The engineers utilize the tablet to capture times for each step (including performance rating of the captured times). Then they can view the analytics of the data, such as its mean, median, mode, standard deviation, outliers, as well as other useful information. Ample time is spent in each area to ensure a large number of observations based on its complexity, number of functions conducted, duration of each function, etc. Times are captured to account for all the variabilities the job functions entail, and done through a detailed process, in lieu of less personalized and customized processes such as via Master Standard Data.

### **The Importance of Time & Motion Studies vs. Predetermined Standards Systems**

There are a great number of differences between creating Time and Motion Studies or utilizing Master Standard Data. One key difference is that Time and Motion studies require the engineer to be on-site. Associates see the Engineer physically standing by them, watching them do the work that they actually perform. Hence, the times that they are being held to for



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their performance percentage are those created based on the work they have performed and been observed while doing.

This is extremely important, as this is what accomplishes their buy-in as valued associates and human beings. Setting the standards by utilizing this method is precisely what gives management and the associates confidence in the metrics they are being measured through. If Master Standard Data were used, from the associates' perspective, times have been picked that they are now being required to abide by without taking into consideration their unique conditions, environment, and all the other unique aspects of their job.

The more thorough approach to standards that Time and Motion studies provide results in an Engineered Standard that is viewed as being significantly more accurate to that specific facility and thus more broadly accepted by associates.

Once the time and motion studies have been conducted, a process referred to as Check Studies is performed. During this phase, all areas are visited again and observed. Data is collected and validated with the engineered standard constructed from the original time and motion studies to ensure the standard has been constructed accurately.

Implementing Labor Management System (LMS) software is recommended to be used to aid the on-site Engineers, provide crucial performance feedback to associates, as well as Operations Leadership, in seeing a more wholistic picture of the associates' performance. The check studies are conducted, and the actual results are compared to the actual LMS output, to ensure the results are in line with what is expected.

As rollouts of Engineered Standards are initiated, the entire process stays exceptionally smooth, as associates have had the opportunity to become accustomed to the entire process and are very comfortable and confident by this point; hence there are no surprises for them.

If LMS software has been fully integrated and launched, the data that it provides can be used to plan for labor needs in the short and long term. This is possible due to the software displaying in great detail by job functions, delays, and idle time that the associates are facing from the moment they clock-in to the moment they clock-out.

This is done via displaying the graphs, charts, and reports that the software provides at the time intervals of the user's choice. These are analyzed in order to discover and minimize/eliminate the challenges and obstacles that the associates face. They can be originated by the associates, in which case observations and coaching can be utilized. However, they can also be originated by management or facility conditions, which management can utilize the information provided by the LMS software to mitigate.

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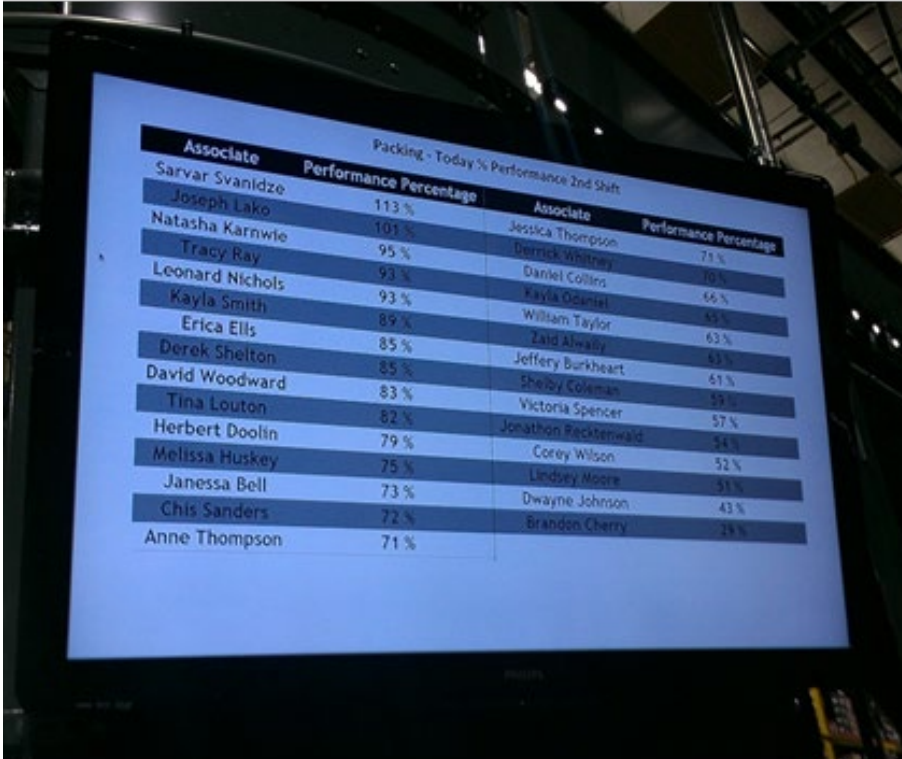
### Critical Key to Success: Performance Feedback

This reporting and feedback process is absolutely vital, as the most important objective of the program is to provide this in a timely manner and as close to if not in real-time. This can be achieved through the use of smart TVs for feedback in eligible work areas. Hy-Tek accomplishes this through the implementation of SUCCEED<sup>sm</sup> Scoreboard TVs as shown in Figure 1 below. Ultimately, the engineered standards and LMS are tools that are only as useful as the way in which the feedback and reporting structure is set.

### The Role of Labor Management Systems (LMS) Software

The tools have to be made use of in a structured feedback and reporting loop, only then will the opportunity for improvements exist. Simply put, the leadership must put in place a system in which associates are receiving feedback as needed and are provided with the tools necessary for them to succeed.

Figure 1



Packing - Today % Performance 2nd Shift	
Associate	Performance Percentage
Sarvar Svanidze	113 %
Joseph Lako	101 %
Natasha Karnwie	95 %
Tracy Ray	93 %
Leonard Nichols	93 %
Kayla Smith	89 %
Erica Ellis	85 %
Derek Shelton	85 %
David Woodward	83 %
Tina Louton	82 %
Herbert Doolin	79 %
Melissa Huskey	75 %
Janessa Bell	73 %
Chis Sanders	72 %
Anne Thompson	71 %
Associate	Performance Percentage
Jessica Thompson	71 %
Derrick Whitney	70 %
Daniel Collins	66 %
Kayla ODaniel	63 %
William Taylor	63 %
Zaid Alwady	63 %
Jeffery Burkheart	61 %
Shelby Coleman	59 %
Victoria Spencer	57 %
Jonathon Recktenwald	54 %
Corey Wilson	52 %
Lindsey Moore	51 %
Dwayne Johnson	43 %
Brandon Cherry	28 %

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Management and users with the appropriate permissions have the ability to view default reports and dashboards that have been provided as a direct result of discussions during the planning phase with the LMS provider. How often they are updated, such as each hour, is also discussed during this time. Additionally, they are able to create and generate their own reports and dashboards.

A combination of these factors gives management deep insight into the labor situation in their respective department, other departments, and even across facilities.

At this phase, the company is up and running with Engineered Standards. Now the company will need to focus on what steps need to be taken with regard to the maintenance of the engineered standards.

### **Importance of Engineered Standards Maintenance**

As new process improvements are made, it is important that the standards are updated/maintained to reflect the new times associated with those improvements. This is yet another of the many benefits of Time and Motion Studies. Because they are done on-site and broken down into individual steps that are unique to the particular method that department in that building utilizes, only time for the particular step(s) that is impacted from the process improvement has to be updated instead of time for an entire process needing to be changed.

The recommended cadence for maintenance and updates is ideally throughout the year but at least once a year. This is done to ensure continued accuracy and update as processes evolve, as there will inevitably be steps that are eliminated through process improvements found by management and/or associates and steps added as company goals change at certain points in time.

### **Incentive Bonus Pay Options**

Generally, the improvements can start to be seen as soon as engineered standards are introduced in a facility. However, to further maximize the improvement potential in a facility, incentives are often paired alongside the introduction of engineered standards. Multiple options are available for incentives, such as:

- **One to One Bonus:** Earned performance percentage is rewarded for all productivity above 100%. For example, an associate that performs at a productivity of 110% will be paid a bonus of 10% of weekly earnings while performing measured work.

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- **Incremental Wage Bonus:** Earned performance percentage is rewarded for all productivity above minimum expectation. The bonus reward is a cents per hour value which increases at prescribed productivity thresholds.
- **Gainshare Bonus:** Calculated as a one-to-one bonus, the associate or department receives half of the percentage above 100%.

Incentives serve to motivate the associates to perform in the most efficient manner possible in order to maximize their incentive payout. This also facilitates a “win-win” situation in which both the company, through the increased productivity it achieves, and the associate, through the potential for increased payout that they become eligible to achieve, have gained as a result of the implementation of engineered standards.

After having engineered standards and incentives in place, company leadership can analyze the productivity results it achieves. From there a decision can be made to either add or remove minimum performance expectations. In many cases, with a robust and attractive incentive plan, combined with the observations and coaching needed to achieve the set incentives, the associates are given enough motivation to perform at their best, leaving no need for the implementation of minimum performance expectations.

The importance of having Engineered Standards in a facility, and the benefits of creating them utilizing on-site time studies versus utilizing Master Standard Data, cannot be overstated. The process of implementation is a multi-phase process. This is done intentionally to account for accurately capturing all of the work being performed by the associates, and each part of the process is analyzed and discussed with management to ensure it is the ideal method.

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