



Labor
Management
Solution Paper

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EXECUTIVE SUMMARY

1.1 Background

As warehouse operations become more sophisticated and margins for goods continue to fall, managers are faced with the following labor management problems:

- How can I measure employee productivity based on the type of task being performed?
- How can I verify that employees are reaching their performance targets?
- How can I reward productivity that exceeds standard performance targets?
- How can I identify and improve processes that are impeding productivity?

The improvements in efficiency and productivity realized with a labor management solution will typically pay for the cost of the solution within a very short time period. Labor Management helps to minimize labor inefficiencies and reduce costs within a warehouse operation by improving employee performance.

After first calculating allowed task time based on the predefined labor standards, Labor Management compares the allowed time to the amount of time it actually takes an employee to complete a task. Employee performance can then be measured, performance goals can be set, and managers have a foundation to improve overall employee performance. By tracking actual vs. standard performance, an organization can also offer performance incentives to its employees, which can in turn improve morale and staff discipline.

Labor Management provides users with the flexibility to measure against Engineered Labor Standards (ELS). Alternatively, baseline standards (piece or pick rates) can be used for activities where ELS may have not yet been defined.

Managers can then measure performance across all areas of an operation, regardless of whether or not ELS have been defined for a given task. Operations, using a combination of engineered and standards baseline standards, can realize all of the labor optimization benefits Labor Management has to offer.

1.2 Goals of Document

This document outlines the benefits and functionality provided by Labor Management, Manhattan Associates' labor optimization solution, as well as configuration and setup, and technical requirements of the product.

1.3 Background

This intended audience for this document is Manhattan Associates' current and prospective clients, business partners and employees.

FUNCTIONALITY and USE

2.1 Labor Optimization

The flow of data from the WMS to Labor Management is straightforward:

First, Labor Management receives specific task information from the WMS. Using that task information and the labor standards configured within Labor Management, a time allowance is calculated for the task (allowances are calculated as either Standard Allowed Minutes (SAMs) or Performance Allowed Minutes (PAMs), which are specific performance factors by user). The allowance is then transmitted back to the WMS user for performance guidance and stored within the Labor Management database.

Once the task has been completed, the actual task information is sent back to Labor Management, which can then use the allowed time and actual time to calculate an associate's performance percentage. This represents an individual's overall performance and takes into account the amount of time an associate has been on the clock and number of breaks taken throughout the day.

2.2 Who Are the Users?

- **Warehouse Personnel.** Allowed times can be displayed when using the RF or Fixed Station options within the WMS, giving a user the incentive to "beat the clock." Options within WMS can also provide operators with visibility into performance metrics.

Labor Management is a standalone module. Warehouse associates will not require any retraining in order to implement the software. All sharing of Labor Management information, such as allowed times and performance feedback, is configurable within WMS. Thus, Labor Management is transparent to the warehouse associates.

Any sharing of information contained in Labor Management is optional and configurable within the WMS Transaction Master. Because of its seamless integration with WMS, Labor Management may not even be 'seen' by most warehouse personnel, reducing the learning curve associated with the introduction of a new software application.

- **Managers, Supervisors and Engineers.** This group uses the Labor Management desktop to review employee performance, determine labor requirements, and analyze labor information.

Performance-related reports demonstrate overall productivity as well as performance by activity, shift and department. Standards (baseline or ELS) can be configured using the Labor Management desktop, which are then validated against these reports.

Additionally, supervisors can clock their employees in or out, adjust their clock times, and adjust events as needed.

2.3 Integration with WMS

When a user enters certain task options within WMS, touchpoints associated with those task options push messages out to Labor Management that contain information needed to calculate allowed task time.

Touchpoints are available in the following functional areas:

- [Appointment Scheduling](#)
- [Receiving](#)
- [Putaway](#)
- [Cycle Count](#)
- [Replenishment \(Pull Case/Fill Active\)](#)
- [Pulling](#)
- [Picking](#)
- [Packing](#)
- [Retail – Put to Store](#)
- [Weighing](#)
- [Manifesting](#)
- [Loading](#)

2.4 Calculating Allowed Task Time

The amount of time it takes to complete a task is determined based on the type of work to be performed and the type of labor standards configured in Labor Management.

ELS are determined by performing time studies of each warehouse activity. Each activity is broken down into elements representing all of the steps that must be taken to complete the task. A picking task might include the following elements: obtaining a picking document, traveling to the location and picking the required amount of the SKU.

Alternatively, baseline standards (activities with only one or perhaps a few elements at most) can be inputted and used as a benchmark for performance review.

When WMS sends task information to Labor Management, the task is automatically broken down into its pre-defined elements. All of the standard times for each of the elements are added together. For example, picking up a label or paper pick sheet will have a standard time associated with it, and travel time for a forklift would be calculated based on the speed of the forklift and distance between pick locations to be traveled.

Any process required to perform a particular task can have a defined time interval associated with it. Once all of the elements have been added together, the SAMs can be determined by adding the values (fixed or calculated) for each of the elements in the activity.

2.5 Calculating Employee Performance Percentage

By comparing the SAM versus actual task completion times, managers can glean valuable information about an employee's productivity; in order to obtain a better, more comprehensive picture of performance, however, an employee's overall performance over the course of a shift (or any time period) can be calculated.

Labor Management provides managers with the flexibility to define performance standards for any employee. If an employee is new, or has recently moved into a new position in a different area within the warehouse, a performance percentage can be applied to that activity to allow the employee time to ramp-up into the position. The SAM divided by that percentage becomes the unique PAM for that specific operator.

Labor Management tracks all activities while an employee is on the clock. The time is divided into various buckets:

- **Direct Labor** – Time spent doing productive work
- **Approved Indirect Labor** – non productive work that is approved
- **Unapproved Indirect Labor** – non productive time that is not approved

The overall measure of performance is the Employee Performance Percentage (EP%), which represents an employee's performance and is calculated by taking the sum of all task allowances (PAMs or SAMs) divided by the sum of all actual time and excluding any breaks and Unapproved Indirect Labor (UIL), or the amount of time an employee spends "on the clock" but not directly working on relevant warehouse tasks (Fig. 1). Minimizing UIL, even without using engineered standards, will increase overall productivity.

$$EP\% = \frac{\sum PAMs}{Total - (\sum NonStdLabor + \sum Adjustments + \sum ScheduledIndirectLabor)}$$

Fig. 1 An Employee Performance Percentage provides a comprehensive view of productivity over time, taking into account both estimated and actual task completion times, as well as time spent on breaks and indirect labor.

An Employee Performance Percentage can be viewed in various reports within Labor Management; in addition, warehouse operators can view their EP% via a secured option within WMS, allowing them to monitor their own performance by seeing how they are performing in their current shift.

The EP% calculation can be "sliced" in a number of ways:

- **By employee**, to evaluate the performance of an individual employee.
- **By job function**, to allow groups of activities to be measured together as a single job function (job functions are configurable within Labor Management). When users go from task to task, the job function changes automatically if the activity they are currently performing falls within the scope of a different job function.
- **By supervisor**, to evaluate the overall performance of all employees reporting to the same supervisor, as well as a summary of the performance of each associate reporting to that supervisor.
- **By warehouse**, to evaluate the overall performance of all associates within a single warehouse.

2.6 Real Time Inquiries

An Employees Performance can be used to view real time or past data in various options within Labor Management. This allows the monitoring of performance during a day or shift or over a longer period of time.

The performance can be "sliced" in a number of ways:

- **By employee**, to evaluate the performance of an individual employee.
- **By job function**, to allow groups of activities to be measured together as a single job function. When users go from task to task, the job function can change these changes impact this options values.
- **By supervisor**, to evaluate the overall performance of all employees reporting to the same supervisor, as well as a summary of the performance of each associate reporting to that supervisor.
- **By team**, to evaluate the overall performance of a team within a single warehouse.

Configuration and Setup

Following Manhattan Associates' defined implementation methodology, a typical Labor Management installation can be completed in about twelve weeks, and can take place at any time during or after the WMS implementation. Developing and defining standards can take place concurrently with the implementation, but requires four to six months to complete.

3.1 Configuration

The following parameters are taken into account when implementing Labor Management within warehouse operations (for ELS, all of these factors would be considered; for baseline standards, only a minimal amount of data is required):

- **SKU handling attributes.** Labor Management can factor in additional time if more effort is required to move certain items in the warehouse, such as bulky boxes and oddly shaped SKUs.
- **Employee status definitions and event adjustment codes.** Managers can adjust the actual time for an activity by entering a user-defined adjustment code, and employees can be tracked by their status (full time, part time, temporary, etc.).
- **Vehicle parameters (ELS only).** A vehicle table accurately calculates vehicle travel times to and from each location within the warehouse by storing variables such as maximum speed and acceleration time.
- **Task types with defined steps.** Components of each task or activity performed in the warehouse must be configured within Labor Management; components can include intermediate steps like obtaining and applying labels, performing picks or pulls, and arrival at the final destination to complete the task.
- **XYZ coordinates (ELS only).** Labor Management calculates the travel distance between locations based on XYZ coordinates within the warehouse.

3.2 Time Studies and Development of Labor Standards

Time studies can be conducted to determine a more precise engineered labor standard for a specific warehouse operation. Time studies are typically performed by an industrial engineer, and are used to determine the amount of time required to complete each step within a given task. Once this information has been configured in Labor Management, the standards can be validated by observing the "actual time" data that is produced in real time as tasks are completed.

3.3 Reporting

Labor Management comes equipped with a number of standard reports, and provides the flexibility to create additional reports based on user requirements for each individual warehouse operation. Designed to provide valuable performance information for employees as well as supervisors, these reports also provide supervisors with an "audit trail" to monitor exceptions to normal performance.

Crystal Reports is the standard Manhattan Associates reporting tool used to create these packaged reports, which include:

- **Employee Performance Reports.** These scorecards provide an overview of performance and utilization during a specific time period for an employee. They provide graphical representation of utilization, as well as a summary of performance by job function. Similar reports are available that measure performance by supervisors, shift, team and across the entire facility.
- **Employee Detail Reports.** These reports allow managers to determine the cause of any employee performance variations. The Employee Tracking Report, for example, provides information about every task executed by an employee, providing visibility into any out-of-the-ordinary situations or hidden bottlenecks that could be affecting productivity.
- **Report Card Reports.** These reports are detailing job function level performance by supervisor, employee, warehouse and team.
- **Standard Event Summary Reports.** These reports detail on standard events listed by employee, supervisor and warehouse.
- **Configuration Reports.** These reports are designed for the engineers and managers responsible for installing and configuring Labor Management.
- **Audit Log Reports.** These reports provide task information detail that can be used to validate the accuracy and fairness of the organization's defined labor standards.

About Manhattan Associates

Manhattan Associates, Inc. is the global leader in providing supply chain execution solutions. We enable operational excellence through our warehousing and distribution, transportation and trading partner management applications. These integrated solutions leverage state-of-the-art technologies, innovative practices and our domain expertise to enhance performance, profitability and competitive advantage. Manhattan Associates has licensed more than 940 customers representing more than 1,400 facilities worldwide, which include some of the world's leading manufacturers, distributors and retailers. For more information about Manhattan Associates, visit www.manh.com.

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