Ten Signs It's Time to Automate Your Warehouse with WMS

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Ten Signs You Might Need a WMS for Your Warehouse

Warehouses and distribution centers are dynamic environments where many different challenges arise. Sometimes those challenges go beyond the normal issues to become overwhelming, and start to seriously impact the performance of the business. A Warehouse Management System (WMS) can help a business with many of these challenges, yet many smaller and medium-sized businesses hesitate to move from a manual paper-based approach to even a rudimentary WMS, based on fears about cost and disruption.

At the same time, Amazon (and other competitors) are seriously raising the bar on rapid, error-free fulfillment at extremely low cost per unit. Consumers have come to expect that orders will consistently ship the same day, without mistakes or any wrong items. Top retailers are also very demanding, with serious deductions and chargebacks for mistakes. Any business, including a small business, that is slow or sloppy in their warehouse and fulfillment operations, risks losing customers to those that can execute well. So how does a business know when it’s time to take the plunge to implement WMS? Here are ten signs that it is time to seriously consider making the move to a WMS for your warehouse or DC:

Figure 1 - Ten Signs You Need a WMS

1. **Error rates climbing or unacceptable**—Too many errors such as wrong items or quantity shipped, incorrectly packed, damaged goods, incorrect paperwork, and other customer claims. Human beings
make mistakes. The more complex, chaotic, fast paced, and unguided the environment and tasks become, the more mistakes they will make, resulting in more returns and chargebacks. If you need someone to double-check the contents of every box being shipped, that can be a sign that too many errors are being made in picking and packing. A good WMS system tames the complexity by providing simple, unambiguous step-by-step guidance for tasks in a complex environment, while verifying correct execution at each step (e.g. via barcode scanning).

2. **Missed deadlines/high expediting costs**—Too many late or expedited shipments, and/or inability to keep up with each day’s orders. Your workers may be walking much further than needed to fill each order. They may be handling items, cases, and pallets more times than necessary. Different items for an outbound shipment may arrive at the shipping area at vastly different times, clogging up and slowing down shipping operations. Causes include suboptimal layout, poor slotting decisions, suboptimal picking sequences and paths, and extra time spent looking for items. A warehouse and WMS that have been configured for optimized slotting¹ increase the pace of picking and ensure that cycle counts are done efficiently (resulting in higher inventory accuracy). The WMS can also ensure that invoices are issued in a timely manner once items are shipped.

3. **Low fill rates/low perfect order rates**—Orders are not being filled completely, or with damaged or incorrect items, or incorrectly invoiced. A portion of low fill rate problems may be caused by inaccurate forecasts or late deliveries from the supplier, but low fill rates can also be due to inaccurate inventory records, poor visibility into stock on hand, and picking issues, all of which can be fixed by a WMS.

4. **Fulfillment costs rising or too high**—Many companies don’t really know what it costs them to fulfill orders. The total cost includes labor, facilities, inventory carrying costs, the cost of systems, equipment, shipping, chargebacks, and returns. As your business grows, the fulfillment cost per unit should go down, not up. However, the battle for ever-faster fulfillment and shipping, combined with inefficient utilization of warehouse labor and space, can turn a growing profitable business into a loss-making one.

5. **Running out of room**—If your warehouse or DC is perpetually overflowing, with hardly room to maneuver, the immediate reaction may be “we need a bigger space.” However, a properly implemented WMS, combined with optimizing the site’s layout and processes, can generate higher throughputs from the same space, postponing the move to a bigger space even as your business grows.

6. **Chaotic environment/flying blind**—If you are always in firefighting mode and the DC feels more like a war zone than a well-oiled machine, it is probably time to look to a WMS to bring things under control. Likewise, if the warehouse is a black hole with no visibility and nobody trusts the information coming

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¹ Slotting optimization can be done manually via a spreadsheet, or using a standalone slotting module, or with WMS-integrated slotting capabilities. Optimal slotting is often based on velocity (number of picks), order patterns, ergonomics, and other considerations. It is good to have an experienced warehouse expert help with slotting optimization. A good article on slotting can be [found here](#).
out of it, or you have trouble meeting traceability requirements (your own, your customers’, or regulators’), or you struggle to generate and send timely ASNs. A WMS system provides the disciplines and data collection, creating the needed visibility, traceability, and automatic document generation.

7. **High turnover/uneven workloads**—A chaotic environment, too much manual administrative work (like manual data entry), and uneven workloads (some workers running as fast as they can, while others are idle) can lead to worker frustration, low job satisfaction, and high staff turnover. If you find you’re spending an inordinate amount of time hiring, training, and micro-managing staff about what to do and where things are, it may be time to switch to a WMS system.

8. **Jammed up receiving dock**—If your receiving area is an obstacle course, with incoming shipments sitting for hours before they are received into the system and longer to be put away, with trucks backed up in your yard waiting to unload, and items often missing or misplaced during receiving, it is a good sign that you could use a WMS. A jammed receiving dock slows overall throughput, increases lost and damaged items, and creates safety hazards for workers.

9. **Products handled too many times**—Every extra touch or move adds labor, time, risk of damage, and errors. Without a WMS, you likely don’t even know how many times a product is touched from the time it comes into your receiving dock until it is loaded at your shipping dock. The process of implementing a WMS provides the opportunity to reassess all your processes, to see if there’s a better way to do things, including improving the layout and flow of your warehouse.

10. **Unable to keep up with growth and demand peaks**—As an overarching symptom of all of the above, your DC may be the bottleneck constraining the growth of your company and/or your ability to reach your maximum revenue potential during peak seasons. In this case, a WMS can be an enabler for the growth and profitability of your firm.

If you are experiencing even one of these symptoms intensely or several of them moderately, then it is time to take a serious look at implementing a WMS. Postponing implementation of a warehouse management system may be costing your business in many ways, including higher labor costs, chargebacks, expedited shipping, excess returns, unhappy customers, and ultimately slowing the growth of your business.

**Agile Incremental Implementation**

It is natural for a business owner to be wary of making the initial leap from a manual approach to a WMS, fearing the potential prospects of disrupting their warehouse, incurring large upfront capital expenses, creating a whole new system and set of processes and complexities (such as retraining their workforce), and doubts about whether the system can handle their particular way of doing business and variety of goods. These concerns are not unfounded, but they can be addressed by taking an incremental approach to implementation, properly addressing change management, using a cloud-based system, committing adequate resources, addressing data and integration properly, and ensuring that good testing is done before going live, thereby mitigating many of the risks. Figure 2 below shows how the journey to WMS and more sophisticated automation can happen in stages. Even within each of these stages, there are ways to break down the implementation into smaller pieces, taking one step at a time, as elaborated below.

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2 ASN = [advance ship notice](#)
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Figure 2 – Incremental Stages of Warehouse Automation

Note: This is not a complete list of all capabilities in a WMS and/or material handling systems. Furthermore, most warehouses will not need or use all the capabilities shown at whatever stage they are at. The sequence of adoption may also vary from what is shown—a capability from a more advanced stage may co-exist with those at an earlier stage. For example, often a warehouse that has not yet implemented a full WMS may still have some material handling equipment (such as fork lifts or conveyors).

WMS, Not Just for Large Enterprises

There’s a common misconception that ‘WMS systems are only for the big boys. We’re too small to automate.’ However, there have been many developments in technology (e.g. cloud-based deployments, intuitive user interfaces) and implementation methodologies (e.g. agile implementation, industry-specific blueprints) that

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3 MHE = material handling equipment.
4 AMHS = Automated Material Handling System. ASRS or AS/RS = automated storage and retrieval system.
dramatically simplify adoption and lower the risks and upfront costs. This is not to say that there are no risks or that you don’t have to be diligent about implementation and change management. But the risk of staying with a manual approach that is not serving your business may well be much larger than the risk of implementing a WMS. If you answered yes to some of the questions in ‘ten signs’ mentioned above (page 1), then very likely you’re not too small to get started with a basic WMS system!

**Starting Small and Quick**

There is a growing trend towards more agile implementations\(^5\) of enterprise solutions. This is the ‘crawl, walk, run’ approach, starting off with the ‘minimum viable implementation’ of a solution. If there is a natural segmentation of the physical space and inventory in a DC, a company can start by doing WMS for only one segment of the warehouse or part of the business. For example, if there is a small e-commerce operation, with its own dedicated inventory, and a separate larger bulk store deliveries operation, the WMS implementation could start by managing only the e-commerce operation first. Then once that initial implementation is running well, the WMS could be expanded to manage the store deliveries as well. Another agile strategy is starting off with the simplest possible system configuration. For example, starting with two zones instead of twenty zones, or starting with a very simple set of business rules, and then building on that as you gain experience.

**Change Management: The Key to Success**

Moving from a manual paper-based approach to a WMS-driven approach entails a significant change for warehouse workers. Paying considerable attention to change management\(^6\) for the project is critical to success. It is important that workers and their direct supervisors are involved from near the beginning to get their input, help them understand why the new system is being put in, how it will impact their job, and ultimately have them fully buy into the new way. Workers should be given plenty of opportunities to discuss their concerns and give input and feedback. Always err on the side of over-communicating. Continuous communications and engaging the workforce takes time and effort but saves a lot of problems in the long run, including potential worker resistance, or outright revolt.

\(^5\) For more on Agile implementations see *Agile ERP: Continuous Improvements Through Rapid, Incremental Implementations and Value Realization.*

\(^6\) A good paper on this is *Managing Change in the Warehouse: A Structured Change Management Methodology When Implementing a Warehouse Management System.*
Creating Workers’ Trust and Confidence
An internal team with clearly defined roles and responsibilities should be formed and given the bandwidth to
do their part of the implementation. This may mean bringing in extra help during the implementation. One or
more warehouse workers, who are highly respected by their peers, should be recruited to be the super-users
and local site champions\(^7\) involved in the discussions and design of the new system from the start. They receive
training and in turn are responsible to train and help their coworkers. Be sure to allow enough time for training
both the super-users and the rest of the warehouse workers \textit{before} the go-live date. Training is preferably done
within the context of their actual job tasks, rather than theoretical training. Advances in user interface design
have made some of the modern WMSs more intuitive to use. However, workers still need to be trained on
the new processes, including why things are being done in a new way, with a system that is much more prescriptive
than they are used to.

Adapting to a WMS’s Prescriptive Approach
Prior to using a WMS, the environment is less structured and workers do their own workarounds as needed,
making their own decisions on things like which sequence to pick items, which orders to pick, and other details.
With a WMS, all these decisions are made for them. In the pre-WMS setting, workers have flexibility to
manually record things after the fact. With a WMS, they scan items and locations at each step to record and
verify correct execution at each step as they go. Hence, workers may think the new system is slowing them
down with a more regimented process. Without proper education, they may not appreciate how much time
and money is being saved both for others (reduced returns, etc.) but also for them personally in no longer
having to search for items they can’t find or taking inefficient putaway and picking paths.

Getting the Needed Data/Integration and Testing
Implementing a WMS requires integrating data about incoming shipments, outbound orders, and
product/package data (such as dimensions and weight). The integration of all this data needs to be factored
into the project plan, since the WMS can’t do its job with incorrect or incomplete data. A system that is pre-
integrated with your ERP and other systems will help tremendously in ensuring that all the needed data is
there. Also critical for a smooth transition is having a thorough test plan and allowing sufficient time for testing
all product flows, warehouse workflows, and integrations. Often it is the non-standard flows that get
overlooked during an implementation and cause problems at go-live time. This includes how you handle
exceptions such as short picks, wrong picks, substitute items, cancel order mid-pick, cancel order post-pick,
before ship, and so forth. Choosing a WMS that has been pre-integrated with your ERP helps to dramatically
reduce the amount of integration testing required, but you will still want to test out your specific configuration
and workflows.

Additional Resources Needed During Implementation
There is no getting around the additional resources and warehouse staff’s time that is required to make the
transition to a WMS. One strategy is to implement the WMS after a busy season, keeping on a few of the best
of the temporary peak season staff so that the WMS can be successfully implemented during the slow season
without impacting business. This approach can also reduce the risks and impact of any unexpected delays in the
implementation.

\(^7\) Some companies have had success in recruiting the most vocal critic of the new system as the super-user. Once
convinced of the WMS’s merits, these ‘converts’ can be the best evangelists for the new system.
Ensuring the Right Layout, Flow, and Processes

A WMS system does not magically fix a warehouse’s wrong layout, poor slotting methods, and suboptimal flow and processes. When embarking on a WMS project, it is a good idea to engage an independent, knowledgeable expert who has completed several implementations before. They can not only help you in system selection, but also ensure that the critical success factors are all addressed, such as change management. That same person should be able to assess the physical layout and flow of your warehouse, your approach to slotting, and your overall warehouses processes. The physical basics must be addressed to get the full benefits of the WMS.

Attributes of a WMS Solution That Accelerate Implementation, Reduce Risk

There are several attributes to look for in a WMS solution that can help accelerate implementation, enable a more agile and incremental approach, reducing risk in the process. These include:

- **Cloud-based systems**—A true SaaS system\(^8\) eliminates the upfront capital costs of buying hardware and finding data center space to house it. Even if you go with a third-party hosting firm to house your server, running traditional licensed software entails the need to get your hardware or virtual servers set up and configured, and load/configure/administer the OS, database, and other supporting software. A true SaaS system does not eliminate the need to configure and administer the application itself\(^9\) (users, data, process configurations, integrations, etc.), but drastically reduces or eliminates the underlying system administration needed.

- **Industry-specific blueprints**—Some vendors offer industry-specific blueprints that leverage proven best practices and process for specific industries. Done right, these can go a long way to cut short the implementation time. The business does not have to spend time figuring out how to configure the system and how to set up processes and screens, since the solution provider has done the lion’s share of that work upfront. An example is NetSuite’s SuiteSuccess program, which includes industry templates for wholesale distribution, and soon for manufacturing and other industries.

- **Pre-integration with your ERP system**—Just because a solution provider sells both an ERP system and a WMS doesn’t mean they are necessarily well integrated.\(^10\) A WMS that is natively built on the ERP platform often offers the tightest integration. Many best-of-breed WMS systems are pre-integrated with major ERP systems as well, though the completeness of that integration varies a lot.

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\(^8\) A true SaaS system is architected to run in a single multi-tenant instance, provides a frequent flow of new functionality (typically once a quarter or more frequently), guarantees that properly done integrations and customizations are future-proof and will survive upgrades, and allows much customization to be done via configuration.

\(^9\) Some SaaS solution providers offer a managed service to manage and administer your application for you.

\(^10\) Some ERP vendors have several different ERP offerings, accumulated over time, as well as multiple WMS offerings. So, it is important to do your due diligence about the level of pre-integration.
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- **Simple configuration and customization**—For an agile approach to work, a system must be easy to evolve over time, so that a business can incrementally improve their performance and use of the system. The ability to easily and rapidly configure and customize a solution, in a way that is guaranteed to survive future releases and upgrades, is a key required element for an agile approach.
- **Agile implementation programs**—Some WMS solution providers have agile or rapid implementation programs, designed to get business up and running quickly, within a bounded period of time. For example, the SuiteSuccess program mentioned above promises implementation within 100 days.
- **Modern UI/UX**—Successful solution providers have spent inordinate efforts to make their system easy and intuitive to use. This ease-of-use can dramatically reduce the system training needed, as well as make it easier to get new employees up to speed in the future.

Taken altogether, a solution with these characteristics can meaningfully accelerate and de-risk the implementation process.

**A Foundation for Growth**

A company that currently uses paper-based, manual methods in their warehouse can realize profound benefits by properly implementing a WMS. Different benchmark studies have shown differing ranges of improvements. Here are some typical results from some benchmark studies of improvements that can be expected when moving from a manual system to a WMS system:

- 10%-15% improvements in inventory accuracy
- 10X reduction in picking errors
- 10% or greater improvements in perfect order rates
- 5% or greater improvements in on-time shipments
- 20%-25% increase in labor efficiency (reduction in labor cost per unit of work)
- 20%-25% or greater increases in throughput and capacity utilization
- Reduction of 0.5% to 1.5% of revenue in total logistics cost

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11 One of the challenges is that there are many ways to measure the same metric. As an example, on-time delivery may refer to delivery to the customer on the requested date, or on a mutually agreed date, or shipping from the warehouse on a planned date. Further, some may define it as delivered anytime on the agreed date, or any time before the agreed time on that date, or within 2 hours or 1 hour or 30 minutes of an agreed time. There are countless ways companies measure the same thing. A good piece on warehouse metrics is WERC’s [DC Measures 2015](#), which includes several pages of guidance on how to measure warehouse performance.
The reductions in errors and improvement in on-time delivery and perfect order rates have knock-on effects in creating higher customer satisfaction and reduced returns and chargebacks. The increases in efficiency and throughput can be game changers for a facility that is bursting at the seams. If moving to a WMS system keeps a company from being forced to move to a larger space and hire more people, enabling them to sustain their growth using the facility and staff they already have, then the WMS system may be viewed as a strategic asset with a large immediate payback, both monetarily and in avoidance of disruption. Finally, beyond the cost savings in the warehouse itself, these improvements can decrease other elements of total logistics costs—less expediting, fewer returns, fewer shipping errors, more economical shipments, decreased paperwork costs, and more. For businesses suffering from some of the ‘ten signs’ mentioned above (page 1), the ROI for moving to a WMS can be substantial.

Getting Started

Getting started on the journey to implementing a WMS does not have to be painful. Here are some ideas on how to get started while reducing risk, implementation time, and disruption:

- Do a self-assessment of the ten signs and decide if it is time to consider implementing a WMS.
- Find and retain an unbiased warehouse/distribution center expert\(^\text{12}\) with experience implementing WMS systems in your industry, to act as your guide and advocate. Ideally they will have expertise in all angles, such as assessing warehouse/DC layout and flow, WMS solution selection, change management, warehouse best practices and metrics, data and integration, and agile implementation.
- Create your internal team, with clear roles and responsibilities, making sure to engage with employees early and often.
- Define your high-level goals and roadmap, and a minimum viable implementation to get started.
- Create a simple plan of what you are trying to accomplish, including measurable improvements, sequence, and timeframe.
- Evaluate and select a WMS solution.
- Take care to get change management right, continuously communicating with workers, allocating adequate resources to the project, doing thorough testing, and providing sufficient training.
- Use the early success of your first implementation to fund further expansion and improvements, as warranted.

If your warehouse operations are running smoothly, you probably don’t need to ‘fix what ain’t broken.’ However, if you are suffering from some of the ten issues described above, then it’s time to act. Postponing implementation of a good WMS is postponing the fixing of problems that are sapping your profits and the morale of your workers. Done right, implementing a WMS may be the best move you can make. Now is the time to start!

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\(^{12}\) Some of the WMS solution providers have considerable industry expertise and programs to engage early in the process. They won’t be unbiased about system choice, but still may be able to give you valuable insights and guidance throughout the design and implementation process.
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About ChainLink Research

ChainLink Research, Inc. is a Supply Chain research organization dedicated to helping executives improve business performance and competitiveness through an understanding of real-world implications, obstacles and results for supply-chain and IoT policies, practices, processes, and technologies.

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