BEST PRACTICE GUIDE

Why warehouse tech investments are a distributor's best strategy

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Executive summary

For many wholesale distributors, it's been more than a decade since any significant changes were made to their warehouse operations. That means warehouses are running on old technology that has great difficulty meeting the demands of a competitive, technology-enabled business. Legacy systems often mean dated business processes are still being followed, or that new processes must be jury-rigged into old systems that were never designed to support them.

With the speed of business accelerating and margins under constant attack, distributors are realizing that what might have worked fine in the past, might not work in the future—or even the present. The stakes are high: **McKinsey & Company estimates** that companies around the world "spend $350 billion per year on warehousing, a figure that's being driven up year over year" as pick sizes shrink and customer expectations shift.[1]

Critical challenges are facing wholesale distributors. Challenges include demanding customers, adding value through innovative services, controlling costs, managing a dynamic workforce, and gaining insight from data gathered across various systems. These challenges are wreaking havoc on warehouse operations, requiring technology investments to ensure smooth operations and the delivery of the perfect order.

> **"Estimates show companies around the world spend $350 billion per year on warehousing."**
>
> MCKINSEY & COMPANY

Distributors whose warehouse operations are stuck in the past need to modernize. To do so, they must make a commitment to operational excellence, beginning with a modern warehouse management system (WMS) that earns the trust of everyone who depends on it. A modern WMS makes it possible to track and guide every stage of warehousing operations, enabling organizations to boost efficiency, improve customer satisfaction, eliminate costly failures, and boost employee productivity.

When you finish reading this paper, you'll understand the market conditions that are driving the need for transformation, the capabilities and achievable benefits modern warehouse management systems offer, and next steps to take toward substantial improvements in warehouse operations.

Main reasons(s) for the purchase of a new WMS

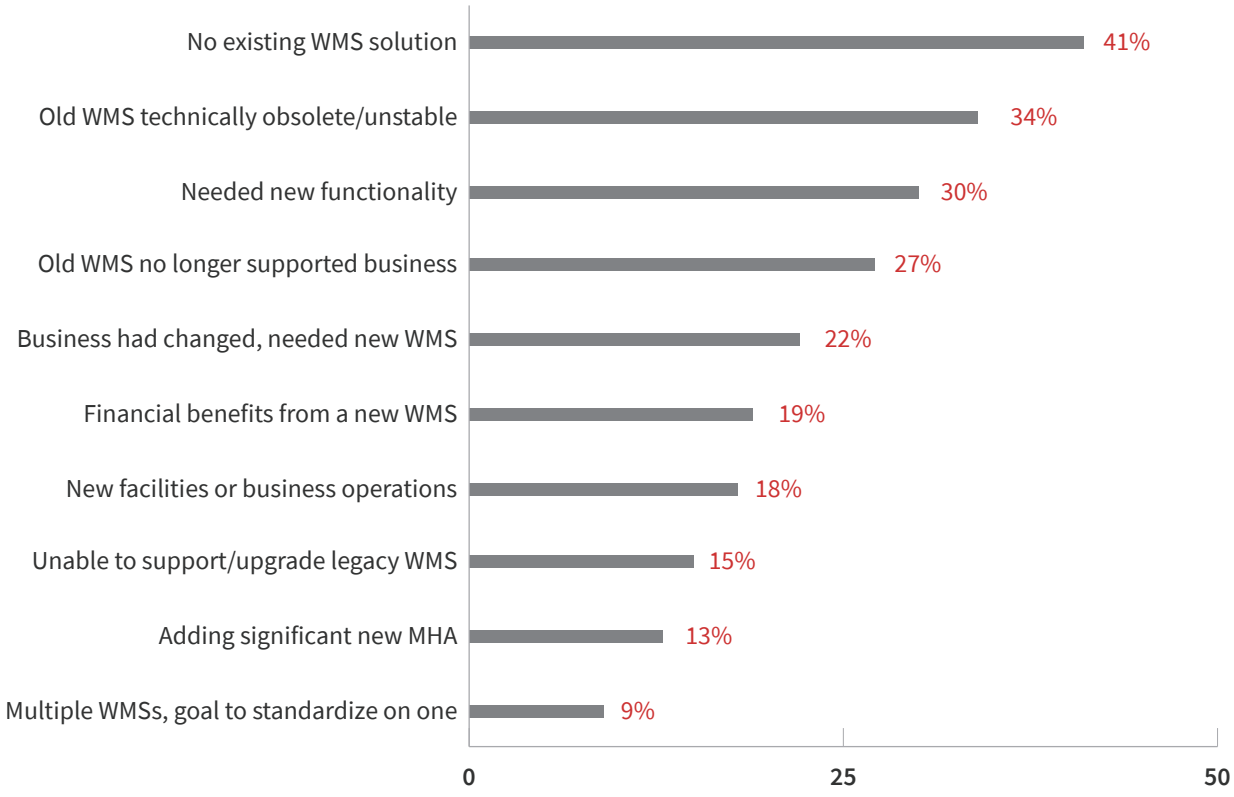


Figure 1, source: Gartner, MHA—material handling automation, March 2020.

Challenges driving the need for technology investment in warehouse management

Inadequate systems

Gartner identifies the various reasons businesses are investing in warehouse management solutions (see Figure 1). A common thread throughout is that the current systems are old, outdated, and unable to address the challenges they face. Not surprising. Systems implemented ten to twenty years ago were not designed to address today's challenges and complexities. And they cannot accommodate the profound technological advancements that are now commonplace.[2]

The meteoric rise of eCommerce

"With double-digit sales growth each year, few shifts in consumption patterns have had a greater impact on the warehousing industry than the rise of eCommerce," **reports the UC Berkeley Labor Center**.[3] In response to this rise in eCommerce, distributors are shifting resources and warehouse space to support the demands of labor-intensive unit picking. The need for advanced reverse logistic support has increased as returns are the new normal, and the speed at which these orders are expected to ship has accelerated the overall order fulfillment process.

Expanding services

Distributors no longer just receive and ship products. To survive, many distributors differentiate themselves in the market through expanding value-added services. Examples include kitting and assembly, maintenance and repair, rental services, and distributor-managed inventory. These labor-intensive services typically require additional warehousing space and staffing requirements, as well as re-architecting the typical flow of goods in the warehouse.

Demanding customers

Tolerance for mistakes has plummeted while customer expectations for speed and custom specifications have grown exponentially. **According to Forbes**: "The rise of next- and same-day delivery has created a standard of demand that puts a new kind of pressure on businesses."[4] Some examples of how distributors' margins are eroding, include: excessive overtime to meet delivery dates; premium freight costs; extended cash-to-cash cycle times; poor inventory control leading to mistakes, disappointed customers, and additional costs; and powerful retail customers with labeling requirements where failure to comply equates to fines and charge backs.

Warehouse and equipment utilization

Distributors struggle to effectively optimize their equipment and warehouse space. When under pressure, the natural tendency may be to spend more on warehouse equipment such as forklifts, pallet racks, and conveyors. Or it may seem easier to contract for more warehouse space, often at premium rates. But rather than increase costs by acquiring additional assets, distributors must better utilize the warehouse and equipment they currently possess. It's imperative that organizations take a critical look at how they move product within their facilities. And if that process hasn't changed in a number of years, it's likely that improved productivity is being sacrificed for what's comfortable and familiar.

Inventory inaccuracy

Inventory accuracy includes not just how much inventory is on hand, but where it is in the warehouse. Inventory accuracy also encompasses tracking information about the inventory like lot numbers, serial numbers, expiration dates, country of origin, and ownership (distributor, vendor, or customer). Having inaccurate information not only causes confusion in warehouse operations, with wasted time and money chasing down the right information or looking for product, but also has a cascading effect on other aspects of the business including sales and finance. In addition, if the counts aren't right, the purchasing department doesn't have the right information when determining what to buy, when to buy, and how much to buy.

Employee productivity

Staffing and training warehouse employees continues to be an uphill battle for distributors. Employees are frustrated with older solutions that don't provide easy and mobile access to information to help them do their jobs better. Distributors also have limited means to proactively manage and monitor labor productivity. There's typically no way to direct activities in the warehouse for maximum efficiency to ensure that workers are performing in the most productive fashion. It's challenging to monitor how a person has performed each day, accounting for time and attendance. If current processes aren't optimized, distributors can face higher operating costs and decreased customer satisfaction.

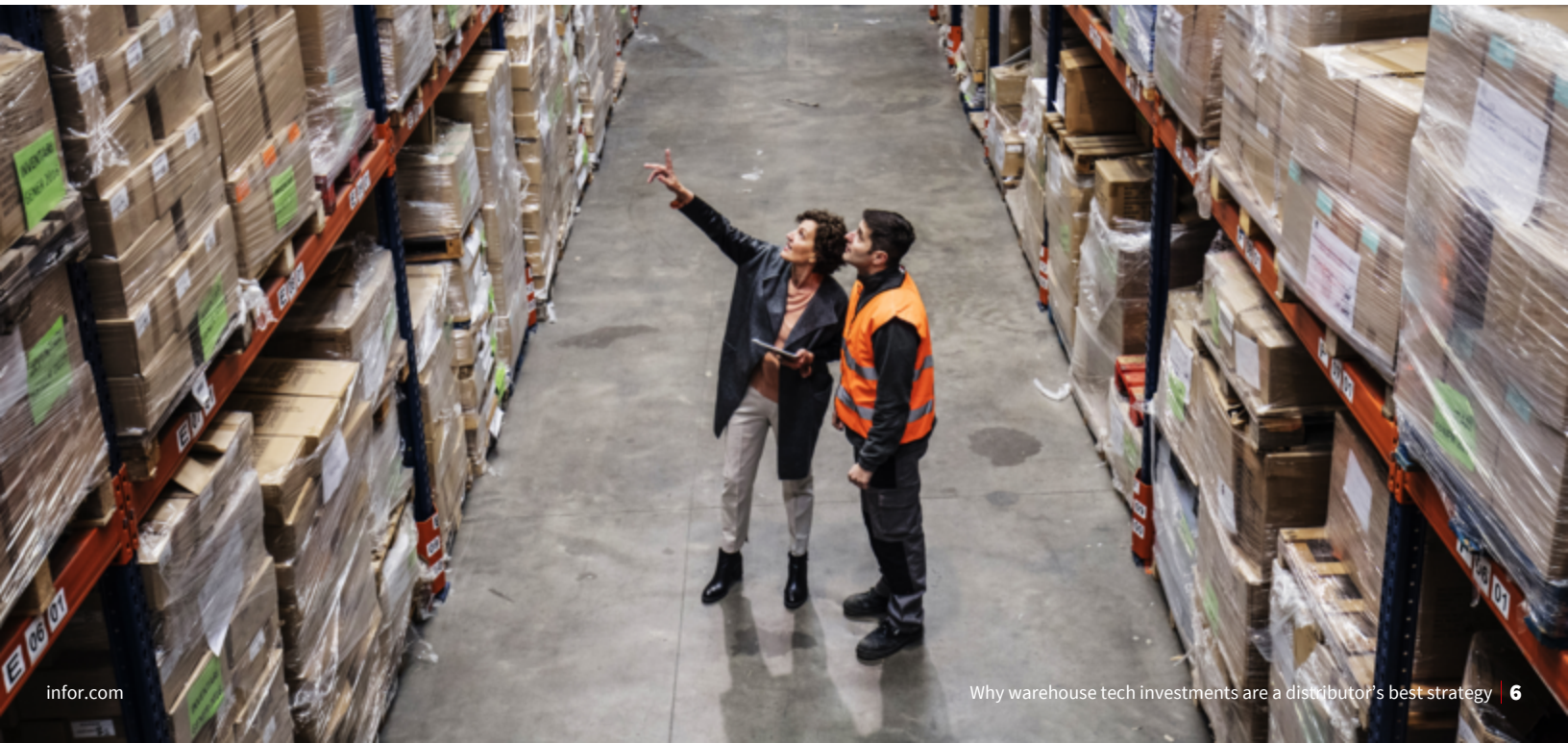
Given these conditions, distributors are faced with escalating costs and complexity, which drive demand for greater productivity in warehouse operations. For these companies to remain competitive and profitable, they must find ways to drive warehouse performance to new levels. For many, however, an existing warehouse system often lacks the automated capabilities necessary to increase visibility into operations, enhance market agility, and boost warehouse productivity.

Nine technologies to optimize warehouse operations

We've identified current challenges impacting efficient warehouse operations and we can clearly see its impact across the broader organization. Now let's review technologies that can modernize your operations, optimize your processes, and help you measure success against expected outcomes.

Inventory tracking

The foundation of success in the warehouse starts with proper identification and tracking of inventory with the level of granularity needed to allocate, fill, and deliver orders accurately. Users should be able to view and monitor the location, condition, and amounts of all products in warehousing operations, as well as rotate inventory according to FIFO vs FEFP principles (first-in, first-out versus first-expired, first-out principles) and other relevant factors. Lot control, serial number capture, date code tracking, catch weights, inventory aging, and expiration dates all provide additional visibility and flexibility. For larger organizations, this information should be available at the enterprise level, ownership level (distributor, customer, vendor), down to the individual branch level. Without this level of tracking, it's difficult to meet fulfilment demands and establish a plan for your operations.



Work and task management

Warehouse automation will enable you to manage the ebb and flow of demand by balancing workloads and tasks with available resources. Task interleaving allows grouping of work orders and locations with similar or complementary attributes into batches and waves so that orders are received, picked, packed, kitted, and shipped in a timely fashion. Individual worker productivity improves by combining complementary tasks to increase output and limit travel time. By enabling task interleaving, distributors limit unnecessary movements, better enable high volumes of work to be done, and maximize efficiency and productivity in the warehouse, while also ensuring best use of their forklifts and other warehouse equipment.

RF and voice direction

RF and voice direction help improve the productivity of distribution and fulfillment processes by using hands-free connections and advanced speech-recognition technology to voice-enable order selection, replenishment, put-away, transfers, and receiving. Workers can operate hands-free without reliance on cumbersome lists, labels, and scanners—vastly improving productivity and order accuracy. The use of artificial intelligence (AI) enabled digital assistants take direct verbal interaction with the enterprise solution to the next level and support a more profound level of multi-tasking for your warehouse personnel.

Labor management

Larger organizations often need help maximizing worker performance in the warehouse. Your WMS should provide workforce planning, staffing, and execution capabilities, as well as the ability to monitor direct and indirect labor and provide feedback to workers and supervisors as picking, packing, and shipping activities are completed. Real-time performance measurements give supervisors visibility into operations so they can identify bottlenecks, labor performance problems, and other barriers to productivity, and take corrective action.

Slotting

Slotting capabilities help maximize productivity and minimize travel time from location to location by determining the most advantageous arrangement of SKUs within a range of pick faces or slots. Slotting minimizes disruptions that result from demand variability by allowing adjustment of product placement according to seasonality, special promotions, and changes in customer order patterns.

Kitting and light assembly

As mentioned earlier, distributors are more frequently offering value-added services. Kitting and light assembly add another level of complexity to an already busy warehouse. Your warehouse management solution should support light manufacturing and assembly work. You should be able to institute postponement strategies, create kits for promotions, and manage the process based on the bill of materials (BOMs), assembly work plans, and assembly instructions provided to the warehouse staff.

This enables the mass customization of products at the time of distribution and fulfillment to ensure customer requests are fulfilled correctly at the lowest total supply chain cost. Kitting and light assembly facilitate personalization and other product enhancements, single- and multi-station kitting and assembly, packaging and labeling operations for existing products, and complex final assembly operations for customer-specific products. As a result of these capabilities, companies can better accommodate changing customer tastes and product requirements.

3D visualization tools

Information presented in 3D visualization tools can make it easier for your team to identify and resolve potential obstacles throughout your warehouse or yard. The ability to not only monitor but also have the power to immediately resolve issues can have a profound impact— streamlining operations by more efficiently uncovering trends. **According to McKinsey & Company**: "A few companies are already able to design and visualize their warehouse operations virtually via 'digital twin' simulations. The simulations allow companies to create virtual models of their existing facilities, and then test different scenarios—no shutdowns required."[5]

Artificial intelligence

Whether you are exploring robotic process automation (RPA) or machine learning (ML) initiatives, there are opportunities to incorporate artificial intelligence (AI) initiatives throughout your warehouse. A successful AI project will address a very specific challenge you are trying to resolve or automate. One of the key differentiators of an AI solution is in its ability to process huge quantities of data and make connections that previously would not have been possible. Keep your mind open to the possibilities when you explore potential AI projects.

KPIs—sample metrics

INBOUND	OUTBOUND	INVENTORY CONTROL	LABOR	DEFAULT
Total quantity received	Total quantity shipped	Adjustments by quantity	Performance leaders	Inventory on hold
Total weight received	Total weight shipped	Adjustments by reason code	Performance laggards	Adjustments by reason code
Total volume received	Total volume shipped	Inventory on hold	Labor performance	Location analysis
Total ASNs received	Orders shipped	Cycle count accuracy	User performance distribution	Picking by area
Total on-time ASNs	On-time orders	Cycle count summary	Labor effectiveness	Picking % complete by wave
Current ASNs by status	Picking activity by area	Inventory empty/ taken by zone	Total cases received/ expected	Picking % complete by ship-to group
	Picks completed by ship group		Pick percentage complete	Labor statistics by area

Figure 2, WMS visibility and BI, source: Infor.

BI and analytics

While typically a corporate initiative, it's important to call attention to how modern BI applications are essential to an optimized warehouse facility. Some of the most valuable tools are personalized interactive dashboards that highlight important tasks, alerts, and KPIs (Figure 2: KPIs-sample metrics). Also valuable is the ability to drill down deeply into surrounding details and create reports without relying on IT to do it for you. Having immediate access to the critical data needed to run the warehouse is essential. Trusting that the data is reliable is another side to that coin and is just as important.

Ideally, the solution should allow you to view and manage your supply chain execution activities as a coherent whole to eliminate bottlenecks and improve all-around efficiency.

Warehouses represent your biggest investments, yet it's often low on the modernization priority list.

A unified solution, combining warehouse management and enterprise resource planning (ERP) is an ideal configuration, especially when built on a common technology with a common user interface.

Beyond the components themselves, you should consider the platform as well. Cloud-based solutions provide many benefits, including: automatic upgrades so that your organization is always benefitting from the latest innovations, enhanced cybersecurity controls and data protection, guaranteed uptime, less reliance on your IT teams for day-to-day management and maintenance of internal systems to free them for more strategic initiatives, and more.

Today, many systems are disjointed and offer inconsistent information, which can prevent your organization from making important decisions quickly and easily. With a fully integrated cloud solution you can simplify, automate repetitive processing, and control your exceptions, doing more with less. You'll be able to run your supply chain like a single, well-tuned machine that can satisfy your customers every time.

The 10 dimensions of warehouse complexity

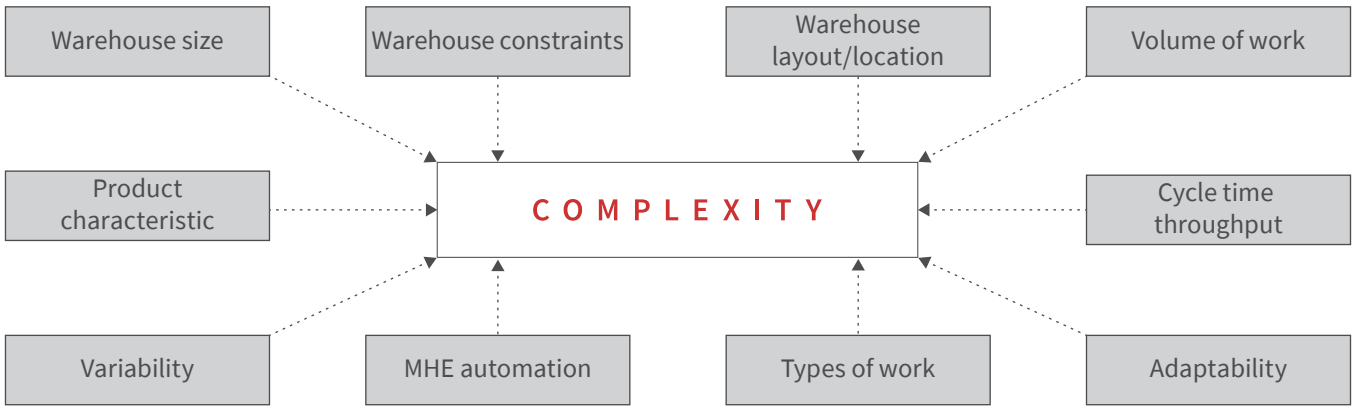


Figure 3, source: Gartner, Prepare for Your WMS Implementation to Avoid Failure and Delays—Guidance from 2,100 lessons learned, Gartner, Oct 2019.

The journey to modernizing your warehouse

What's the best way to begin a modernization project for your WMS?

Project management

Due diligence is always a great place to start. And like many other complex initiatives, there are established project management steps your organization can use to stay on course and achieve your strategic objectives. Some of these steps include executive sponsorship, engaging subject matter experts (SMEs), involvement at all levels, vendor consultation, goal definition, risk assessment, change management, implementations schedules, and scope creep. Implementing a new warehouse management solution should follow these standards to be successful. Gartner's "10 Dimensions of Warehouse Complexity" (Figure 3) should be taken into consideration as well.[6]

It's important that you elevate a number of considerations that are specific to an investment in a warehouse management project. You must consider the physical space, the types of products involved, the services you provide, and your people.

Physical location

The foundation for all your plans is your physical location. Consider the size, layout, and geographic location of your warehouse or warehouses. How many warehouses do you have and how do they share inventory (if they do)? Does the size of your warehouse fit your current and future requirements, or do you need to consider a reconfiguration? Are you constrained by your location? Are there infrastructure changes that should be made to increase automation? How can you more fully integrate the physical location with the solution in which you're investing? Should you use material handling equipment (MHE) to allow you to better utilize space? Ultimately, make sure the solution you select will support your need to continue to evolve your physical space and have the flexibility to adjust the creative use of space.

Products

Another consideration to make is whether you have special requirements for the actual products you carry. Do you have requirements for refrigeration, hazardous materials, regulated or secured products, or quarantined products? Do you need specialized equipment or certifications to move this product? How many SKUs are you sourcing from your warehouse? Do you need to customize any products? Do you own the products or does the vendor or customer own them?

Services

As business models shift and services become an increasingly important aspect of your strategy, it's critical that the execution of those services is seamless. What value-added services are you offering your customers and vendors today? What are your plans for the future? Will you need to track your inventory differently as it is altered or repackaged? Do your products need to be sent out to a third party for some part of the process, then brought back in before being shipped to the customer? Do you need to set up dedicated workshops, or is it a more fluid process? How much extra movement is required to execute the value-added services? How can you ensure components are easily accessible, that products don't get lost from point A to B, and that you always know where it is in the process?

People

Ensuring the empowerment of your employees is a factor that is receiving more focus and attention today. The cost of recruiting, onboarding, and retaining good employees makes it imperative that part of your analysis is ensuring the solutions optimize their activities. Also, sometimes warehouse staff have different requirements compared to other departments within the organization. You may have more seasonality, temporary staff, or 24x7 operations. And while it may sound obvious to ensure the solution offers a good user experience, there are many variations on that subject. There's demonstrable value in intuitive solutions that deliver fully integrated information needed by your employee. Other tools that employees rely on to streamline their day-to-day tasks include mobility, document management, easy access to information and reporting tools, easy onboarding, and cross-training.

In addition to following a solid project management plan, it's critical for your organization to understand how you plan to elevate your differentiators through warehouse management modernization and do a careful analysis on exactly where you are today, what your goals are for the future, and what possibilities are on the horizon.

Tech investments in your warehouse could be the most strategic change you make

The warehouse is the heart of your company. When your warehouses are modernized and operating at an optimal level, there is a cascading effect on the rest of your organization. Sales confidence rises because they know the product will arrive on time. Customer service knows commitments will be met. Customers themselves are delighted because they get the product they need on time, when, and where they need it. Smooth operations help to maintain margins and improve overall profitability. Best of all, it's very attainable. The technologies reviewed are available today as very real solutions with a demonstrable ROI that can transform your business (see Figure 4).

Technology can help level the playing field between large and small distributors. According to Mark Dancer in *Innovate to Dominate, The 12th Edition in the Facing the Forces of Change© Series*: "Digital technology is often said to be a democratizing force for change, with implications for business-to-business companies as it can level the competitive playing field between large and small players."[7]

You're facing challenges. Fortunately, there are technologies available today to improve productivity, streamline processes, and control costs. Don't let another company steal your competitive advantage. Do something today.

Productivity improvement examples

AREAS	INDUSTRY AVERAGES
Receiving	5-10%
Put-away	20-25%
Replenishment	20-25%
Picking	10-25%
Packing	10-25%
Shipping/Loading	16-25%
Returns	10-25%
Inventory control	10-25%

Figure 4, source: Infor.

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