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8 Components to a Successful
Distribution Center Optimization
Strategy Every Retailer, Distributor
and Manufacturer Should Know

TABLE OF CONTENTS

- Operational Assessment** 4
- Facility Design** 6
- Space Utilization**..... 6
- Direct to Consumer**..... 7
- Automation**..... 8
- Inventory Planning and Management**..... 9
- Labor Process Analysis/Labor Management Analysis**..... 9
- Change Management**..... 10
- Conclusion** 10

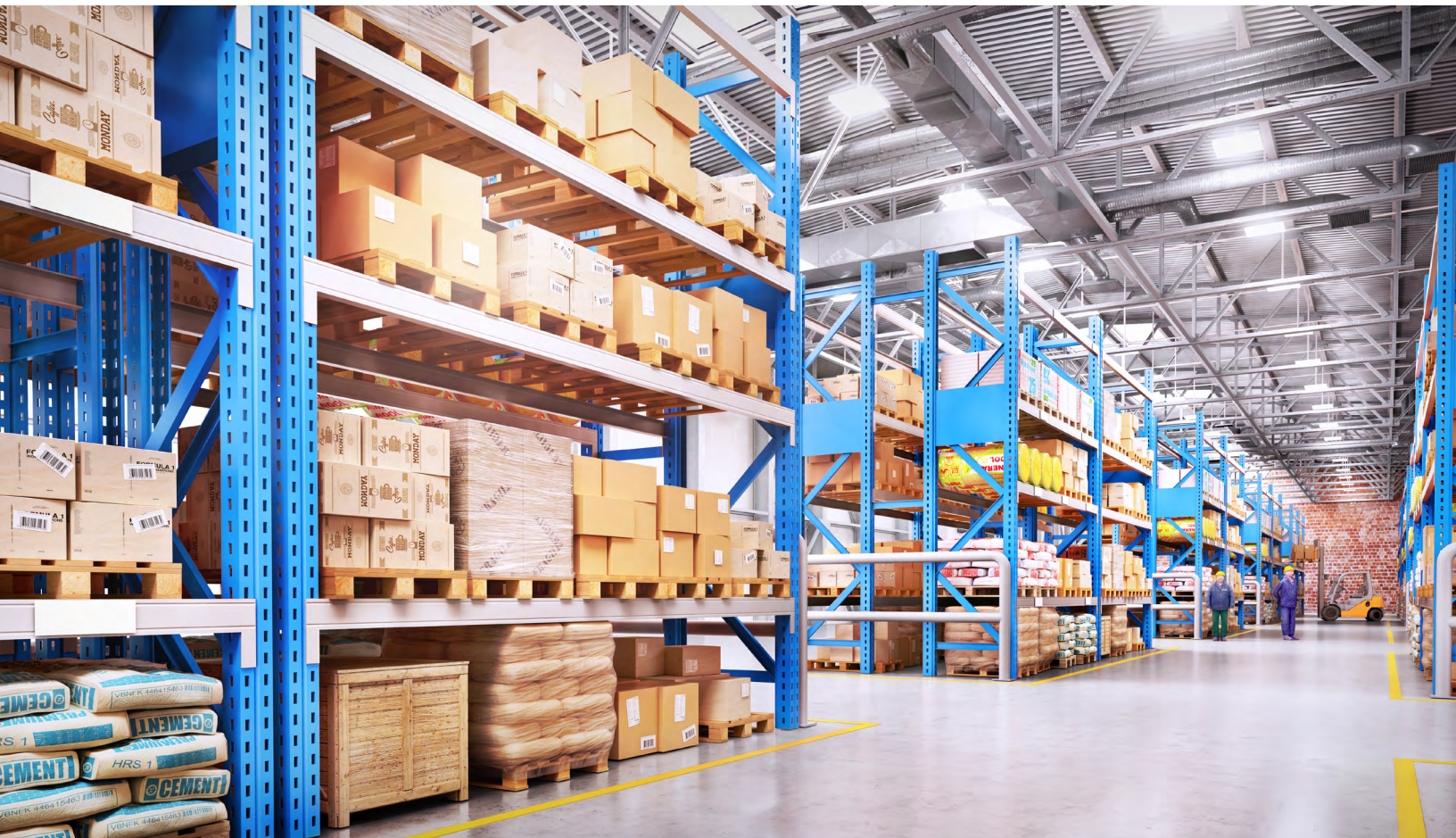
INTRODUCTION

According to the U.S. Department of Commerce, ecommerce hit \$245.28 billion in Q4, up from \$185.70 billion during the same quarter the prior year, and more than \$1 in every \$5 spent on retail purchases came from online orders.

These astounding stats and trends continue to challenge distribution centers (DCs) as consumers get more comfortable making purchases online, forcing retailers to fine-tune operations riddled with compressed fulfillment timeframes and expectations from consumers around same day, next day and two-day delivery.

In the past, DCs were commonly single-channel facilities, but as consumer buying habits evolved, omnichannel DCs are more common than ever. Companies operating traditional DCs under these new requirements are experiencing rising costs, capacity challenges, service issues and quality risks. A fully optimized DC will decrease these costs, enhance customer service, improve quality assurance, overcome capacity constraints and ultimately better serve the customer.

Where to start? Businesses must consider how long it has been since the DC design was last reviewed and optimized. For a successful implementation, the project should start with a focus on the data and processes as well as transition planning, which is a crucial phrase that is often overlooked. Below are eight components to consider for strategic DC optimization, from the assessment phase through change management.



ASSESSMENTS

Use an Operational Assessment to Determine Supply Chain Execution Excellence

Supply chain execution excellence requires three foundational pillars, which include:

- Optimized processes vetted using Lean principles, such as value stream mapping and value-add analysis
- Digital technologies that support the optimized processes
- Trained associates to execute the processes and technologies

When looking to optimize a DC, an operational assessment is a great place to start. The challenges of warehousing are increasing and companies, more than ever, need to understand how their operations and supporting technologies are measuring up. Uniquely evaluate supply chain execution performance through operational and technical value assessments to evaluate and quickly realize benefits and ROI.



Lean Operational Assessment

Lean operational assessments will identify where leading technology systems make the most sense and where implementing more efficient distribution network and facility design with ideal labor models is possible. Further, a Lean assessment will provide both short- and long-term roadmaps to drive change and improve productivity to eliminate waste from the supply chain.

If a company is experiencing any of the following challenges or pain points, a Lean operational assessment should be the first step in optimizing the entire DC.

- The company is growing and processes are not scaling to meet demand
- There are difficulties meeting shipping deadlines due to increased cycle times
- Capacity problems are rising, requiring the handling of more product
- There are too many manual processes, resulting in an inefficient operation
- Inventory and/or shipping accuracy is below 95 percent
- Tribal knowledge drives management and procedures
- There is a lack of metrics to measure productivity

Whether it is a change in labor force, customer expectations or order profile, companies must identify how their warehouse operations are being affected and execute on reducing waste to meet service level, accuracy and fill rate expectations.

A low-cost assessment can make prudent cases as to whether to make further investments. With a Lean operational assessment, businesses can expect to see a 25 percent increase in labor productivity and typical savings in the amount of four times the cost of the assessment. Additionally, a low-cost assessment can provide a detailed roadmap prioritizing initiatives, quick wins and return on investment (ROI) for both a strategic and tactical recommendation resulting in less than three quarters of a year on average.

Operational Technology Assessment

Technology is the key enabler of global supply chains. A system-focused operational assessment aims to seamlessly integrate technology into an organization's warehouse operations; it takes a deep look at systems' requirements and touchpoints to ensure the capabilities of a firm's technology is adequate.

Operational assessments help determine where technology can support processes, not dictate them – for example, a warehouse management system (WMS) can provide radio frequency (RF) technology to guide pickers where the next pick item is, greatly reducing picking errors and streamlining the picking process. An implementation of an electronic data interchange (EDI) can decrease processing errors and save time and labor as documents like purchase orders are exchanged.

Adding the appropriate warehouse technology can also reduce operational costs by increasing inventory count and order picking accuracy.

An “as is” or current state operational assessment should include, at a minimum, the following activities:

- **Logistics cost identification and benchmarking** to identify major sources of logistics costs and areas of savings opportunity within transportation, inventory control and DC operations, including labor and automation costs. enVista’s recent blog titled, “Identifying Logistics Spend and Opportunities for Cost Savings: Strategies to Consider,” is a great starting point for identifying these cost drivers and the associated benefits of implementing a variety of supply chain execution systems, including order management systems (OMS), transportation management system (TMS), warehouse management systems (WMS) and labor management systems (LMS).
- **IT roadmap and infrastructure review** should be performed for all supply chain planning and execution systems (on prem and SaaS based), including integration requirements with pre-built adapters, software support and maintenance communication agreements and hardware (radio frequency and voice).

Investments in technology such as a WMS, LMS, OMS, warehouse control system (WCS), warehouse execution system (WES) are significant decisions for business leaders. An assessment will identify gaps in current systems and help to provide a technological road map that will enable the necessary supply chain capabilities. Furthermore, the assessment will indicate the greatest areas of risk, ensuring that the resulting initiatives are prioritized correctly to provide the most value to the business.



FACILITY DESIGN

Address DC Challenges with an Optimized Layout and Design

An organization's supply chain processes, technology, labor, material handling equipment (MHE) and long-term goals should dictate facility design, which includes physical layout, processes, systems and operating plans. Once an operational assessment is completed and process gaps are identified, it is best to then identify resources, document processes and synchronize the physical and material flows of a DC using data to create an optimal facility strategy.



Understand Baseline Processes and Identify Resources

Lay out current operational functions (and design assumptions) by using a cross-functional process flow technique that captures interdependencies among systems, processes and people.

MHE Assessments

Analyze distribution center operations and develop process improvements to support long-term business goals. MHE assessments can provide management of the flow of materials, different types of equipment and strategies to manage growth and demand.

Analyze Current DC Data

Evaluate and analyze at least one year's worth of data to capture current and future capacity requirements due to sales volume, ecommerce demand and seasonality fluctuations. The critical data profiles include receiving data, inventory data and order data.

Define Material Flow Strategies

These generated data reports will drive material flow (storage and picking) strategies throughout the facility. These cross-functional flows that encompass the organization's business systems will help to develop non-value added, versus value-added process flows. Value-added vs. non-value-added processes, better known as "value streaming," is a Lean process for evaluating processes within an organization.

Evaluate and Design Alternative Strategies

There are several alternative scenarios for consideration that should be reviewed upon completion of the above. Defining at least three

distinctive design alternatives will help evaluate the overall investment, installation and operating costs of each plan, as well as the after-tax economic analysis. The best warehouse strategic plan based on the overall economic and qualitative evaluations such as flexibility, expandability, safety, security, integration and ease of implementation will be revealed.

Understanding, analyzing, defining and evaluating warehouse strategies against current distribution costs and metrics will help bring about significant improvements including:

- Elimination of non-essential processes
- Reduced operations costs (labor and inventory)
- Improved utilization of space
- Reduced order cycle time
- Avoided capital expenditures: facilities and equipment
- Improved customer service
- Optimized system utilization (WMS and LMS)
- Optimized equipment utilization

Facility design will involve more than just warehouse configuration, it calls for strategic thinking among all operations and parties involved. The result is a balanced, cost-effective DC design that meets each organization's requirements. The combination of a proven design along with the right equipment, vendors, process design, personnel and technology, ensures a successful Lean facility capable of adapting to anticipated business growth and change.

SPACE UTILIZATION

Use Space Strategically and Plan Ahead

Creating more space strategically is one of the most valuable assets for a DC. However, there is no one-size-fits-all when it comes to space utilization solutions. Businesses will want to explore common ways to create more space and capacity in a DC, when and why a DC is running out of space, where to look for underutilized space and how to best evaluate a long-term approach now and in the future to meet business requirements.

CBRE Research has found that \$1 billion in incremental e-commerce sales generates 1.25 million sq. ft. of warehouse space demand. Therefore, net absorption is projected to reach nearly 250 million sq. ft. in 2021, more than the previous five-year annual average of 211 million sq. ft. This will spur new construction, which is already near-record levels, and strong preleasing of speculative projects.

There are a few reasons a DC might run out of space, including a boost in business, or a DC is holding obsolete or dead inventory because of a breakdown in demand planning and inventory management. When a DC is at capacity, there are two common places to look for more space, (1) extend racking upward and (2) decrease aisle width. There are also uncommon ways to increase space as well that may be just as feasible.

Add Half-Pallet Locations

Many DCs are simple one size fits all: all pallet locations are sized for the biggest pallet the DC will use. If a pallet is condensed, more pallets can be stored, and thus more product in that same area without a lot of underutilized space.

Directed Put-Away

It is usually directed by a warehouse management system (WMS), but instead of the put-away rules being “put the pallet wherever you want to put it,” which might not optimize the space utilization, directed put-away knows what locations are best suited for what pallets.

Use Space You Did Not Realize Existed

Typically, there is space above receiving doors or above shipping doors. A pallet rack can be put there and create space to put supplies, slow-moving materials or create a miniature staging for inbound or outbound product that has not been processed yet.

Hang a Shelf Above a Conveyor

This is an easy way to increase storage location for smaller items or items that are slow moving because they do not need to be replenished by hand or by a fork truck, but rather the conveyor system.

Simply Store Product in Trailers

Businesses can eliminate the need to expand the facility because of a peak period which may only last a month or two. The trucks are only needed for several months and allow the organization to get through a peak season where space is particularly tight.

As previously stated, achieving optimal space utilization is not a one size fits all approach. Rather, it is a combination of freeing up space, adding equipment and/or trucks for a temporary solution.

DIRECT TO CONSUMER

Implement Direct to Consumer (D2C) to Remain Competitive

The shift in channels due to unforeseen circumstances now requires the need for high availability of products with excellent service levels. More brands that were traditionally manufacturers or wholesalers are adopting a direct to consumer strategy, and this strategy continues to become a key element in a business's omnichannel success. According to eMarketer, D2C brands' future ecommerce growth will come from a mix of new buyers entering the segment and increases in spending per buyer. In 2020, eMarketer predicted that 87.3 million people ages 14 and older in the US will make a purchase on a D2C platform, up 10.3% year-over-year. Meanwhile, spending could grow 12.7% to \$203 per buyer, meaning by 2022, the number of D2C ecommerce buyers could reach a milestone, at 103.4 million.

It has also been reported that businesses like Adidas, Nike, PepsiCo, Nestle and others are projecting that D2C will account for a huge portion of its sales in the coming years making investing in a D2C strategy to exit its many wholesale partnerships critical.



So how can a business adapt its warehouse quickly to its future state and operational design? A robust strategy is critical to ensure success and remain competitive with third-party retailers. D2C fulfillment varies vastly from retailer or wholesaler fulfillment, and it is important that a warehouse is optimized specifically for direct to consumer fulfillment. Whether using a single ecommerce platform or multiple online marketplaces, these channels must seamlessly integrate with an existing WMS, ERP system and accounting software to keep track of orders and inventory. Further, an efficient warehouse flow must be established to account for quick picking and ensure fast shipping.

In addition to ensuring the right systems are in place and warehouses are optimized to be on par with third-party retailers, steps to provide a positive customer experience include:

- **Establish expectations and promises for a smooth buying experience.** These need to be established up-front so customers understand exactly what to expect, including shipping costs, shipping timeline and what the returns policy and process is.
- **Communicate clearly and often.** It is important to communicate with the customer during every step of the post-buying process – from confirming the order is received, its estimated ship/arrival date and notification of the shipment and delivery.
- **Ensure a positive post-buying experience.** Perhaps the biggest mistake brands make is assuming the customer journey is completed upon delivery of an item. Returns and exchanges are an important piece of the customer experience, and a seamless return/exchange is vital in creating brand loyalty.

This omnichannel strategy will allow businesses to keep the correct amount of stock on hand and reduce the minimum amount of stock required to maintain optimal service levels for a business's customers as it transforms its operations. Building in omnichannel inventory strategies like direct to consumer will expand fulfillment capabilities, meet customer expectations and provide an enormous number of benefits such as:

- Improved service level agreements (SLAs)
- Decreased transportation costs
- Reduced split shipments
- Reduced out of stocks and markdowns
- Minimized carrying costs
- Increased fulfillment
- Preserved gross profit margins
- Greater brand control
- Access to more customer data
- Opportunity to build customer loyalty

As consumer buying patterns shift, implementing a direct to consumer strategy will ensure brands are remaining competitive and offering the consumer various buying options based on their preferences. Optimizing a warehouse that encompasses the right technology and most efficient flow will help ensure a successful operation.

AUTOMATION

Leverage the Right Automation, Where You Really Need It

Lowered costs and more on-time fulfillment is the name of the game. However, with the rapid growth of SKUs, wholesalers and distributors are finding it hard to make informed decisions about their operations. This drives the need for smarter use of labor, equipment and technology.

The most successful companies winning in this fiercely competitive environment are taking advantage of automation to streamline and optimize their DC operations, balancing increased ecommerce demand with store demand, improving efficiencies and balancing human labor versus automation.

In order to do so, manufacturers and distributors must know their business and understand that processes must be optimized before automation is added to complement what is already in their fulfillment center. The right technology enables production workers to become more efficient at picking, packing, palletizing, etc.

To project and model an optimal approach to both distribution center labor productivity and automation, consider an MHE or Automation Assessment to assess and benchmark automation against your current operations, determining which processes can and should be handled by robotics to drive efficiencies, cost savings and time to value. All warehouses have different requirements based on supply and demand, therefore starting with an assessment will provide with the information needed to develop a customized solution address each of those unique business requirements.

Benefits of Choosing the Right Automation Application

Determining the right automation partner and application are critical to achieving:

- Efficiency and flexibility in the warehouse
- The right mix of automation and systems
- The right level of automation
- Ensuring the lowest total solution cost is achieved
- System and integration needs
- The overall roadmap for distribution assets
- Customer solution to meet throughput goals

Automating a warehouse and order fulfillment operation has become the primary strategy to ensure the realization of supply chain productivity and fiscal goals while maximizing customer service levels.

INVENTORY PLANNING AND MANAGEMENT

Reduce Inventory Levels Through a Robust Sales and Operations Planning (S&OP) Process

Inventory typically represents the largest cost of goods sold and accounts for the single biggest line item for manufacturers, distributors and retailers alike. The challenge with this significant investment is that it can be an asset, liability or a combination of both if not managed correctly. Unfortunately, despite tremendous effort and resources invested, many companies are still not performing to their full potential when it comes to omnichannel fulfillment and continue to experience challenges related to inventory visibility and optimization.

To optimize and improve inventory planning and management, it is critical to start by reducing inventory levels through a robust S&OP process, incorporating demand analysis, forecasting and planning, inventory optimization and omnichannel order orchestration.



Demand Analysis

Understanding customer demand is crucial in today's environment. Without proper understanding, demand can turn into a top driver of expenses (and headaches) from inventory costs to fulfillment challenges.

Forecasting and Planning

Reduce stock levels to address issues of overcrowded warehouses, poor cash flow and obsolete inventory, down to the SKU-level based with demand planning and forecasting. Enterprise collaboration and new technologies such as artificial intelligence and machine learning combined will help to provide a comprehensive understanding of all the data businesses have access to and how to best incorporate that data into forecasting strategies and processes.

Inventory Optimization

Inventory precision and positioning involves accurate allocation across shelves and channels, safety stock evaluation, improved velocity, reduction of supply and demand variability and inventory positioning based upon push and pull boundaries. When a retailer has its inventory house

in order, out of stocks are reduced, carrying costs are minimized, fulfillment speed increases and gross profit margins (GMROI) are preserved.

Omnichannel Order Management

An omnichannel OMS is the only business solution that drives both top-and-bottom-line revenue. An OMS provides essential visibility into inventory available to ship and available to promise, which many retailers struggled with as their stores closed during the pandemic. OMS solutions that include AI-driven dynamic inventory allocation maximize gross margin return on inventory investment and omnichannel order profitability, accelerating omnichannel transformation and unifying commerce to fulfill BOPIS/BORIS, curbside/click-and-collect, ship from/to store, dropship, marketplaces and pop-up stores.

With proper inventory planning and management, businesses will be able to determine adequate levels and handling inventory with respect to their stock requirements and optimally product position in the network to maintain service level and reduce overall holding cost of inventory.



LABOR PROCESS ANALYSIS/ LABOR MANAGEMENT ANALYSIS

Enhance Workforce Performance and Increase Profitability

Labor remains one of the highest costs within the supply chain, while at the same time, fulfillment speed (the “Amazon Effect”) has become critical to competitive advantage.

The four macro-economic disruptors of historically low unemployment, affordable wages, ecommerce and distribution center growth and the ever-increasing order delivery expectations from two-day, to one-day, to same day are fueling the competition for recruiting and retaining labor and the need for the consideration of a labor management program, where automation alone is not the answer.

With proven results of 10-15 percent labor reduction and a focus on associate engagement as part of a holistic Human Capital Management program, a properly implemented labor management (LM) or workforce management (WFM) project is one component of digital supply chain execution systems that provides the following features:

- Documented best practices or SOPs necessary for training associates
- Establishment of baseline expectations, such as facility throughput or engineered goals
- Labor planning algorithms to match available hours to facility inputs, such as receipt and storage of goods and outputs like picking and shipping
- Cost to serve data to ensure order profitability by channel served, such as retail, wholesale and direct to consumer
- Real-time alerting and reporting via mobile applications to allow for corrective actions to be taken immediately, such as redeployment of labor to processes that are not keeping up with demand or SLAs
- Change management training to communicate what is expected within all levels of the organization
- Opportunity to provide incentive-based compensation to the workforce for exceeding the daily and/or weekly production expectation



CHANGE MANAGEMENT

Power Fast Delivery Through Employee Adoption

For a warehouse to operate efficiently and continuously improve, change management is necessary. This agile approach should not be taken lightly. To properly address people, processes and technology, businesses will need to consider the impacts to an organization and help associates embrace the adopted changes to help realize benefits. When done properly, it will lead to increased ROI and deep ownership from associates as a business transforms and distribution centers are optimized.

An effective change management strategy will start by identifying people-dependent benefits and objectives as they pertain to the overall business strategy. Businesses will then want to map out an effective and seamless plan to manage the people side of change. Finally, businesses must ensure a well-trained user team capable of leveraging the new technology.

With a successful change management program, businesses can expect to:

- Capture the people dependent portion of ROI
- Mitigate risk associated with change
- Increase productivity and decrease employee resistance

The ROI of a project is highly dependent on a change management strategy. With a change management strategy, businesses can ensure a guided transition, and not just completed projects.

CONCLUSION

Customers want agility, flexibility, speed and convenience. The ability to deliver the necessary seamless, unified commerce experience for customers hinges on the capability to get products where customers will buy them – whether in store, online, marketplaces, etc. – and to get them cost-effectively. The combination of a proven warehouse design along with the right equipment, processes, people and technology ensures a successful, Lean facility capable of adapting to anticipated business growth and change.

Following the steps outlined in this eBook will enable a distribution center tailored to the new normal, operational omnichannel profile. Businesses will not only be able to deliver but compete on speed, agility and service.

enVista provides DC optimization end-to-end solutions from consulting to technology and automation. We work to understand our clients' business goals and analyze their operations in order to implement solutions that address specific requirements, ultimately driving the greatest value to the organization.

Let's have a conversation.™