WHITE PAPER

E-commerce and Distribution's Perfect Storm

Neglecting Warehouse Operations Can Undermine Growth



FORTE

Make Distribution Your FORTE

Introduction

Just because something is "a good problem to have" doesn't change the fact that it's still, fundamentally, a problem.

Ordinarily, adding sales channels and impressive sales growth make the CEO, sales and marketing executives and other stakeholders very happy. But sales growth does not always translate into additional profits. "Too much of a good thing" springs to mind when you're required to fulfill increased demand with a distribution system that was already at or over capacity. It's all too common that the boardroom commits resources to the front end of the business — sales, marketing and product development — or demands moving into new sales channels only to rely on a fulfillment system that is already at or over capacity on the back end.

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What's at stake for companies where this is the norm? Loss of focus on a simple fact: Delivery is the moment of truth for any brand.

A Storm Is Brewing

Neglecting the back end of the business can quickly undermine new channels, increased market share and sales growth — especially in this day of instant access to information, a globally connected consumer base and an omnipresent data stream from social media. In particular, moving into e-commerce invites the most connected and most social customers to your front door. Once the door is opened, it can't be easily closed and those customers are the ones who will let the world know what they found inside in terms of customer service and delivery.

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Such a scenario should create a picture daunting enough to force distribution to be considered, and actively advocated, as a front-line business strategy — as a way to increase profitability and brand equity while sustaining growth and enabling new sales channels.

In one of the classic distribution pitfalls, a growing company running an undersized, suboptimal warehouse needs to resist the temptation to simply throw labor at the problem and instead embrace growth properly. There are already a multitude of pressures being put on the warehouse via the on-demand environment that has given rise to SKU proliferation, additional value-added service requirements and extreme product customization. Furthermore, changes in the global business environment are driving most distribution center (DC) operators to handle more frequent, smaller orders as their customers try to reduce inventory, and e-commerce takes the frequency and size of orders to a new extreme. Add to these challenges the fact that the procurement department is probably buying in bulk to save costs, bringing the potential for rising congestion, increased inefficiencies and new safety issues.

As a result of this perfect storm, accuracy and productivity levels decline. In the end, adding labor alone will simply increase labor costs and congestion with little to no productivity increase, and it may not be appropriate or cost-effective in the longer term.

Are you running out of room in your facility?

Did the front office decide to dive into e-commerce? Are more frequent sales and promotions creating an inventory nightmare? Check these areas first and ask these questions:

Slotting

- Could you reslot your inventory to make better use of your cube?
- Are there enough pick slots for the current number of active SKUs?
- Are the pick locations properly sized and the proper storage media being used?
- Do you find that you are picking frequently from reserve and therefore need to slot higher-velocity items into an additional pick line?
- Are the pick areas properly set up to match the type of orders being fulfilled?
- Are the high-volume pick locations distributed properly across the picking area, reducing aisle congestion and balancing out the workload?
- Are "golden zone" pick locations being used optimally? Is there room for improved ergonomics?
- Might an evaluation of order profiles suggest modifying certain carton quantities to reduce the number of split-case picks, i.e., having manufacturers pack smaller cartons of product that is ordered frequently but in smaller quantities per order?
- Are you having to replenish too frequently and/or experiencing stock-outs indicating insufficient stock reach in pick locations?

Reserve storage area

- Do you struggle to find available open locations?

- Are you performing frequent consolidation moves to create storage space?
- Are multiple SKUs mixed within storage locations?
- Does product linger in staging locations, and travel/pick aisles, increasing dock-to-stock times and bottlenecking the operation?
- Is product being stored in trailers in the yard or in off-site facilities?
- Are storage locations adequately sized or is there too much open space from product to beam?
- Typically, having three to five reserve storage media sizes is a best practice — do you have enough? Too many?
- How much white space do you have across your storage area? Is it time for VNA?
- Are you using all available vertical space?

Dock space

- Is there sufficient inbound and outbound dock space to support your operation?
- Is there enough inbound space for unloading, check-in and staging steps?
- Can outbound orders/loads be properly staged for truck loading?
- Do you have lift truck and/or employee congestion issues?
- Do staged goods end up spreading into operating aisles?

When your answers to these questions start setting off the alarm bells, it's time to act. The costs associated with operating with insufficient space and over-capacity systems can include these issues:

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- Excess travel times, inefficient usage of material handling labor and skyrocketing operational costs
- Cost of staged trailers or outside storage along with associated transportation and material handling labor
- Shorted or unfulfilled orders due to stock-outs
- Increased risk of injury/damage due to congestion

Having these problems doesn't necessarily mean it's time to move to a new warehouse — far from it. Much can be done in simply optimizing your existing operations in your current facility or smartly adding automation.

Are materials handling operations inefficient?

Insufficient throughput rates are not always related to lack of space — sometimes they're due to inefficient materials handling operations. Smaller scale distribution system improvements may deliver the processes you need to cost-effectively stay ahead of demand. Even with the smallest improvements, a data-driven, engineered approach is important. The availability of good, solid data is key. Information such as daily transaction data, historical inventory levels and product characteristics all play important roles.

Small warehouses are typically manual operations requiring their operators to be creative problem-solvers. Informed by solid data, installing a small amount of automation or making a change in process can do wonders for productivity rates, as noted below:

- Semi-automatic tapers, mechanized void-fill systems, scales and manifest systems can result in increased packing efficiencies.
- Installing gravity conveyor throughout the pick lines may increase picking rates.
- Pick-and-pass picking may be a natural consideration for improving the pace with high-velocity items.

When retrofitting an existing system, consider more than just your current needs and facility. For example, install equipment that is cost-effectively movable in case you need to relocate it in the future. Another approach is to leverage your full building height through construction of pick modules, packing work stations, value-added service lines, etc., on upper mezzanine levels to help you work more efficiently within building constraints. Some growing companies are able to accommodate up to five years of growth and drastically increase productivity in a well-planned, existing facility.

While you should always want to maximize the utility of current facilities, growth happens. As your company continues to expand or you add new sales channels, there will come a point when building a larger facility or expanding your existing one is the right thing to do. Identifying when capacity will be truly maxed out, indicating it's time to plan the move to a new facility, is essential to maintain a growth trajectory and avoid introducing inefficiencies and roadblocks.

Time to Expand

The steps from a small, mostly manual warehouse to a medium-sized semi-automated warehouse to a large, fully automated warehouse each require matching operational and technological advancements. It's important to know the operational differences, system requirements and all of the necessary steps in making the transition. Be prepared.

When looking to expand existing facilities or when building a new warehouse, consider the following costs:

- Network analysis to determine the size and location of any new facility
- Purchase of land
- Systematic analysis for optimizing the new facility design based on business needs
- Construction costs

- Implementation of materials handling equipment and systems
- Transfer of labor, office supplies and inventory
- Training on the new systems
- Time investment for the entire project and more

We're talking about a multimillion-dollar capital investment. You must do your homework to make sure that such an investment is justified. Additionally, the planned and designed solution must be flexible and scalable enough to meet your future needs while achieving a return on investment.

Growing Out of an Apparel DC

A leading brand of premium fashion apparel distributes to its wholesale and retail stores from a 70,000-square-foot distribution center located in southern California. Historically a wholesale distributor, the DC operated as a classic pick/pack warehouse, which supports this model well.

As is typical of many companies today, the strategic direction moving forward is to grow all distribution channels: wholesale, retail and e-commerce.

> *Leveraging the proven FORTE CONTINUIM™ Methodology — a unique design process involving a complete analysis of the current operations and business needs — before things got out of hand resulted in the right plan to address the company's needs, now and into the future.*

As an initial solution to an already growing e-commerce channel, all e-commerce fulfillment is handled through a 3PL provider. On the retail side, the company has more than 100 stores worldwide with plans to open 20 more each year. The current DC layout does not support a flow-through model — the most effective for a retail distributor — so a number of challenges preclude the company from operating in an efficient manner and using its space most effectively.

Based on these issues, the company brought in FORTE as an objective consultant to assess the current operation and to help answer the following questions:

- How can we become more efficient and better support a multichannel distribution operation within our existing DC?
- How can we leverage potential new space?
- Should e-commerce fulfillment be brought in-house to become more profitable?
- How long will the existing DC support current and future growth?
  - Should we relocate the current DC and, if so, where?
  - Should we open a second DC? If so, where?

Leveraging the proven FORTE CONTINUIM™ Methodology — a unique design process involving a complete analysis of the current operations and business needs — before things got out of hand resulted in the right plan to address the company's needs, now and into the future.

A phased approach was developed, to minimize the initial investment and enable the solution to scale with business growth. Overall costs of the project were reduced, through reuse of all possible existing equipment; options were included for initial cost reduction, while allowing future upgrade potential as growth dictated. For example, the recommendation included minimally automated pick module structures, put-to-store system and processing conveyor, to reduce the initial investment while allowing a move to fully automated options in the future, to increase efficiency and productivity as needs required.

Recommendations are highlighted below:

- A multilevel pick module for replenishment orders, supporting both picking to the shipping carton and batch-picking methods
- A put-to-store system for the fulfillment of floor set orders
- A processing conveyor and sortation system for all outbound parcels
  - Automated flag and divert, based on weight check and other criteria
  - Put-to-light for sorting of multiline e-commerce orders
  - Put-to-light for sorting of orders after valued-added services

Think Big Now to Get Big Later

Processes and procedures

Small warehouses usually don't have strictly defined, formal processes and procedures where larger warehouses tend to have set procedures to keep control and tasks more efficient. Since you will need commonality of process no matter the worker, start to think big now. Formal processes and strict guidelines for activities will be necessary even though your work force may not increase. Starting to set procedures, create standards and build training material now will help you grow over time. You will need to change and grow, so plan for it now.

Software implementation

Growing companies will naturally evolve to more complex and sophisticated distribution environments. Once a manual operation reaches the point where functions can't be handled well, software should be evaluated to meet the expanded needs. Based in large part on the specific requirements of warehouses moving from manual operations to more process automation, a new software platform, warehouse execution software (WES), has been developed. WES bridges the gaps between the manual processes and automated needs of growing operations while offering the flexibility required to grow to meet future demands without extensive customization. In some cases, a warehouse management system (WMS) can be adopted, potentially paired with an enterprise resource planning (ERP) system. If an operation is moving into more

automated equipment, a WES and/or warehouse control system (WCS) can be implemented to offer the local control and optimization required to fully leverage the investment in automation while ensuring the most efficient use of labor.

Not all warehouse operation software solutions are created equal. You need to investigate a number of offerings and perform a gap analysis. This step involves identifying the required system functionality for the new operation to support the new throughput requirements. A gap analysis simply identifies the functional requirements you need but do not currently have.

Avoid the Storm

If you're growing quickly, jumping into e-commerce, or adding product lines, get a handle on the growth and avoid drowning in the perfect storm by effectively implementing timely low-cost modifications for short-term improvements while adding labor wisely. Track your operation's performance and build a business case through data analysis and forecasts to develop a plan outlining trigger points for phasing in operational improvements to handle the projected growth. Most important, actively use this plan with the accompanying business case to advocate distribution as a front-line business strategy so that you can secure the resources necessary to meet customer demand, maintain a competitive advantage and sustain long-term growth.

Why FORTE

Single-Source Accountability

Whether we're helping you develop a strategic plan, design and build a distribution facility, or optimize a distribution operation through performance metrics and analytics, FORTE provides a true single point of contact responsible for the complete performance of your distribution network. No finger pointing. No fragmentation of responsibility. No multiple suppliers for technical support. You have performance goals, and it's our job to make sure they're met on an ongoing basis.

Total Objectivity

We don't manufacture equipment. We don't develop WMS software. We don't have commercial arrangements with any suppliers for expected volumes of business. We're simply interested in delivering the most efficient distribution solutions at the lowest total cost. Our client-side service approach means our only allegiance is to our customers. So with every engagement, you know we'll choose the most appropriate level and blend of technologies integrated into an effective operational system.

Expertise

Our team is deeply rooted in the hands-on implementation of distribution center design and warehouse automation. FORTE's engineers and technicians integrate today's best practices in supply chain management and distribution center operations while developing next-generation technologies. As a result, our solutions employ the best combination of practical advice, data-driven analysis and technology-enabled systems. With FORTE, you get:

- More accountability than a consultant
- More experience than a systems integrator
- More objectivity than a manufacturer

That's why the world's fastest-growing companies are making distribution their FORTE.