



DEVELOPING A WINNING NETWORK STRATEGY

A guide to optimizing your
distribution center network

NORTH
HIGHLAND

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FOREWORD

In today's fast-changing business environment, logistics and supply chain leaders for consumer products brands and retailers are frequently tasked with evaluating the distribution network their company employs to serve its customers. Whether these customers are retail clients, the company's own stores, the end user, or a combination of all three, the bar for improved service and lower costs keeps rising.

If you have a complex network of numerous facilities or wish to conduct a detailed analysis, you will likely need a network modeling tool. If, on the other hand, you have a simple network or are looking at a limited set of options, spreadsheet tools may suffice. In any case, before diving in, it is necessary to understand the context of the situation, the audience that will be reviewing your analysis, and the range of options to be modeled.

In this e-book, we will share some of the strategic challenges we have seen companies address and the approaches used to develop a network strategy. We'll also identify the factors you should consider in evaluating your own distribution network strategy.

FOREWORD

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STRATEGIC CHALLENGES AND CONSIDERATIONS: FOUR SCENARIOS

A wide variety of changes can compel you to review your company's network. Businesses grow, shrink, make acquisitions, and divest themselves of assets. Every year, your customers' expectations likely increase, and your competition makes moves that you may need to counter. The merchandise variety that you buy and receive must be tailored to your customers' needs and the marketplace you serve. As a result, the mix of channels by which merchandise gets to your customers is always in a state of flux.

Before we review how to develop a network strategy that works for your organization, we'll look at four common business scenarios that impact network strategy—scenarios we've helped companies successfully address. In each one, we'll explore the challenges the client faced and provide you with the questions and considerations to address before you begin developing your network strategy.



SCENARIO ONE:

YOUR COMPANY IS GROWING AND NEEDS MORE CAPACITY. HOW DO YOU KNOW WHERE AND HOW TO INVEST IN ADDING CAPACITY?

This is the most common scenario our clients face. The need to support your company's increasing shipping demands is a pressing one, which usually creates a need for investing in infrastructure to do so. Many of our clients, however, struggle with where to start when adding capacity.

Distribution center (DC) capacity can be broken down into two categories: storage capacity and throughput capacity. Storage requirements are based on the breadth of the product line (the number of unique stock-keeping units, or SKUs) and the volume of inventory stored in units, cartons, or pallets. Throughput requirement is usually measured in units or orders shipped per day or week.

The first question to consider is whether your capacity limitation is "storage," "throughput," or both. Your current operations can be improved in a variety of ways to meet peak storage or throughput requirements. Dictating the number of SKUs available for shipping, the amount of inventory to be stored, and the daily or weekly shipping profiles is usually outside the role of supply chain management, but the means for responding to these factors may offer opportunities.





Consider the following questions when evaluating whether your current operations can be improved:

- Is your storage equipment space sufficient? Can it be made more efficient? Do you utilize the full height of your facilities? Do you have the right mix of storage types? Are slow-moving, dated SKUs moved out of the main storage areas to provide capacity for current items? Is off-site storage a feasible option?
- For throughput, does your weekly/daily shift schedule and staffing approach provide enough capacity? Can the shift schedule or labor staffing approach be changed to provide the needed capacity? Are the operations productive enough, and does product flow efficiently through the facility? Can new processes, equipment, or technologies add the necessary capacity and if so, would these be prudent investments in your current operations? Can a mezzanine be added or expanded to provide needed processing space?

If your business is growing beyond your ability to improve existing capacity, then the question becomes, “How do I handle growth?” If your current facilities can be expanded, should you do so, or should you add a new facility? You can also consider bypassing your facilities with a portion of merchandise (e.g., having a business partner dropship some of the product lines they provide or having some shipments bypass your network altogether and flow directly to your customer). If you need to add a DC, does it make sense to outsource to a third-party logistics partner (3PL)?

If you are going to **add a DC** you will operate yourself, here are the questions to consider:

Does the new DC supplement your current operation(s), does it replace one or more of them, or will it serve to consolidate two or more smaller DCs?

If there will be multiple DCs, what is the right role for each?

- Regional vs. centralized
- Break-bulk DC vs. full-service DC
- High-volume SKUs vs. low-volume SKUs or all SKUs
- Flow-through (cross-dock) volume vs. inventory

What new technology, processes, and equipment types should be used in the new DC?

- What should we invest in, and what is the real ROI it will provide?
- If we cannot afford everything, what is essential in the near term (and won't limit our long-term options)?
- How will any new processes interface with existing order management and warehouse management systems?
- How difficult will it be to bring new solutions into action?

How soon does the new DC need to be brought into operation?

The traditional timeframe for making a new facility operational from the ground up is 18 to 24 months, but this can be six to 12 months if a suitable vacant facility is available. In some cases, simple operations can come online in three to six months in available buildings.

How will you transition from the current operations to the new ones? Does it make sense to have a gradual transition of operations from the current facility, or is a single “big bang” switchover better?

What resources will be required to implement and execute a new strategy? How can you continue to support current operations while bringing the new operation online?

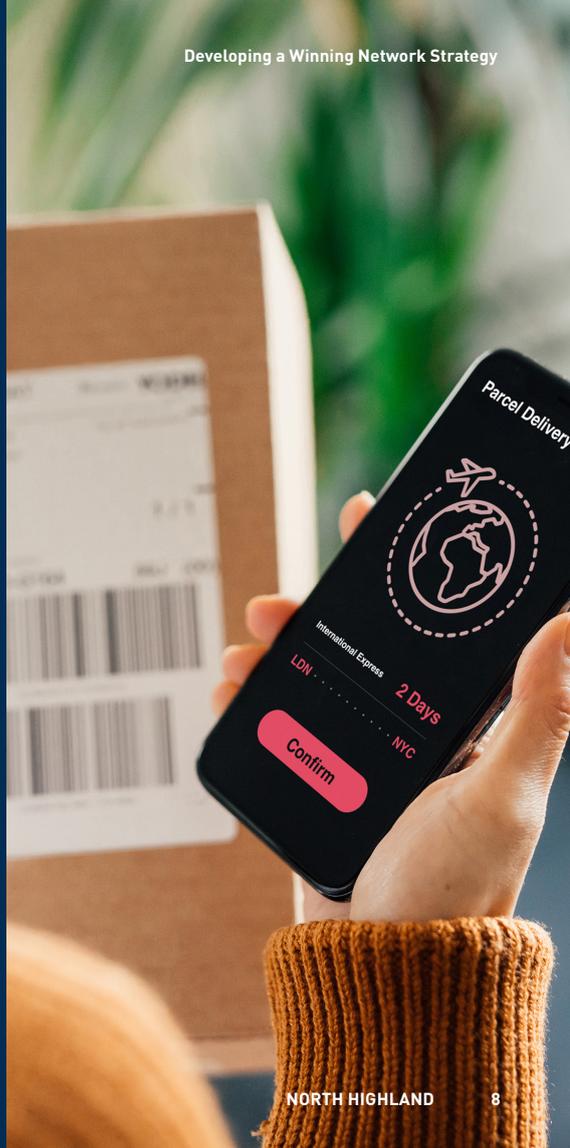
SCENARIO TWO:

YOUR DC IS NOT LOCATED CLOSE ENOUGH TO YOUR CUSTOMERS.

We frequently hear from clients that they can't serve customers in a distant region; this limited "service reach" can harm your growth potential or reduce your profitability. The service time requirement, usually expressed in terms of delivery days needed to get merchandise to the customer using ground transportation, is the most important factor driving the size and complexity of consumer products distribution networks.

For example, one national auto-parts retailer has over 50 facilities in its network, because the largest share of end customers consists of the auto mechanic who needs a specific part within hours (not days). A major competitor selling largely the same merchandise, however, can cover the country with only 10 DCs, since all of its merchandise is sent to 5,000-plus stores its customers visit to get the part they need.

Many smaller companies in the U.S. have a single DC located on the East Coast or the West Coast. These companies face the question of whether they need to add another facility on the opposite side of the country in order to grow. The answer often lies in the geographic distribution of their customer base, their sources of supply (both domestic and imports), and the ease with which they can stretch their service coverage to the opposite coast.



About 20 percent of the U.S. population lives west of the Rocky Mountains. Another approximately 20 percent lives between the Rockies and the Mississippi River, with most of this group in Texas or in states along the west bank of the river, and roughly 60 percent of the population lives east of the Mississippi.¹ For the many California-based startups, this means that over half of their potential customers in the U.S. are more than 2,000 miles away.

Lives between the Rockies
and the Mississippi River

20%

Of the population lives
east of the Mississippi.

60%

Conversely, East Coast companies looking to add a second DC on the West Coast need to realize that this facility will likely only be closer to 20 percent to 30 percent of customers. For industries with a large portion of merchandise coming in from Asia, a West Coast DC is often justified by doubling as an entry point for inbound product flow.

Parcel ground service models show a five-day in-transit time for crossing the continental U.S. coast-to-coast. Does this match up with your customers' expectations? This likely depends on the type of product you carry and the extent to which service time impacts revenue for your product. Many direct-to-consumer companies have been successful for decades in serving their customers from a single DC, with the optional choice of next-day delivery by air for a premium cost. Amazon, however, has turned this expectation on its head by offering same-day, one-day, and two-day Prime delivery in many locations.

¹ U.S. Population Growth by Region, U.S. Census Bureau, 2019.



Consider your customers' expectations: Do you need to be able to offer two-day ground delivery nationwide? Depending on whether you need to provide this to 90 percent, 95 percent, or 100 percent of the people in the continental U.S., this will require a minimum of four to six shipping points. With a few tricks, you may be able to shave one DC out of your network. Examples include: a) if your business has enough volume to justify zone-skipping throughout the western half of the country and b) if you can afford paying premium next-day delivery charges for a portion of your customers.

But what if you are losing business because you are too far away from your customers and can't meet their service expectations?

We recently evaluated the cost of providing an extra DC for a client and determined that the company would need to increase sales in the states close enough to the new DC to save one to two days of transit time. The company would need to increase sales in those states by 10 percent to 15 percent to cover the increased supply chain overhead. Whether this trade-off makes sense depends on your customers' demands for service.



The company would need to increase sales in those states by **10 percent to 15 percent** to cover the increased supply chain overhead.

If you determine that a new DC is needed to support growth and meet your customers' expectations, take the following into account when selecting a location:

CUSTOMER LOCATIONS:

How close do you need to be to your customer base, and what is the implication on outbound transportation costs? How will your customer locations shift geographically over time?

INBOUND TRANSPORTATION:

How close do you need to be to your sources of merchandise? If you import goods, how close do you need to be to the port(s) of entry?

COMPLEXITY OF ADDING A FACILITY TO THE NETWORK:

Going from a one-DC to a two-DC network adds a level of complexity to the allocation of inventory, but adding a sixth or seventh one shouldn't create a new allocation challenge that you haven't already faced.

CONCENTRATION OF INVESTMENT:

With more (and smaller) facilities, it may be more difficult to justify the investment in systems, processes, and equipment that you desire.

LABOR MARKETS:

With DCs concentrated in major metro areas, the competition for warehouse workers is extremely high. And with several states legislating annual increases in minimum wage levels, the costs keep getting higher.

BUILD VS. LEASE; CITY VS. REMOTE LOCATION:

Do you need to invest in a facility located close to a major market to increase the likelihood that it can be sold if you ever need to vacate it? Or is it better for you to invest in a rural location with lower costs and be a preferred employer in the local labor market?

GOVERNMENT INCENTIVES:

In the current hot economy, states are less willing to offer concessions on taxes or provide training funds for new facilities. These are harder to come by in more affluent metro areas but can still be found in underdeveloped parts of a state.

SCENARIO THREE:

YOU HAVE EXCESS CAPACITY.

The business media usually covers companies that are fast-growing, high-flying, and changing the world, but that's the small minority of businesses, particularly in the retail vertical. Leaders of high-flying businesses that have never seen a downturn probably stopped reading this e-book long ago. If, however, you're like most, your company has likely experienced the inevitable up-and-down business cycles. During these economic swings, there will be times where you find yourself with excess capacity.

Excess capacity can also occur following a business acquisition. As you rationalize your combined DC operations, you frequently find redundancies and surplus capacity in some regions. You'll need to determine how to rebalance your DC assets most effectively.



What do you do about surplus capacity if you operate a single DC?

You can often reduce the size of the labor force to meet the current order volume. Since the largest portion of cost associated with running a DC is variable labor, this will help you manage those expenses. If your operation is in a community with other thriving businesses, you may also have the option to sublease part of your space to another business. If subleasing is not an option, you may need to turn the lights off in some parts of the building and hunker down to minimize overhead costs.

If you operate multiple facilities and have excess capacity, should one or more of them be closed?

If so, can the business be consolidated into the remaining facilities and still operate efficiently? This situation typically occurs after an acquisition in which each business has its separate network of distribution facilities. The combined collection of facilities isn't always well-positioned to support the larger company for the future.



Developing the right network strategy in this situation can be a delicate process, because some long-standing operations may no longer be a good fit. Because of this, the decision-making process surrounding how to downsize the network may be best led by an objective, outside party who should consider the following:

- Overall network capacity requirements
- Future business projections—up or down
- Location(s) of each facility relative to product sources and customers
- Utilization of each facility
- Productivity of each facility
- Labor market and availability in each location
- Management team structures and capabilities
- Facility ownership—internal or leased
- Market environment for liquidated buildings in each area
- Capital investment in and depreciation status of each building
- Potential for consolidating multiple facilities into a new DC
- Other unique case-by-case considerations



SCENARIO FOUR:

YOUR COMPANY'S BUSINESS NEEDS ARE CHANGING, AND YOUR CURRENT OPERATIONS DO NOT SUPPORT YOUR NEW PRODUCT OR ORDER PROFILE.

Large-scale DCs, especially ones that feature automated material handling equipment, are usually built to optimize the storage and processing of a particular mix of orders and merchandise. Over time, however, shifts in customer expectations or changes in the company direction can drive new requirements. Consider the following examples:

- A large direct-to-consumer DC is designed to service a line of products that consisted largely of apparel and fashion products, with growth capacity for five years. Within one year, however, the company builds a substantial furniture business that filled the building.
- A multichannel DC is created to ship a large portion of full-case orders to wholesale and retail customers. Over the next several years, however, the portion of full-case shipments drops by half and the average number of units per order drops by over two-thirds, limiting the throughput capacity of the facility.
- A company fulfills orders for both retail store and e-commerce customers. With flat revenue projected for brick-and-mortar sales and the continuing growth of direct-to-consumer shipments, the procedures used to process orders in multichannel facilities are getting out of whack.
- A retailer has a 15-year-old facility, with processes designed for handling limited e-commerce volume. E-commerce has now grown to be a significant portion of the volume, and operations are lagging.



Your strategy to meet changing business needs must be customized to your unique situation, and we've successfully employed a variety of approaches to tailor operations to our clients' new realities, including:

DEVELOPING COMMON PROCESSES FOR MULTICHANNEL ORDER FULFILLMENT:

One company we worked with installed a combined goods-to-person picking process to support e-commerce orders, retail orders, and wholesale orders. Although this process may be slightly less productive for one of these business channels, the ability to reduce a product flow through the facility provides for better staff planning and labor utilization.

MOVING OUT A BUSINESS UNIT:

When it's not feasible to combine processes across business units, a business can be moved out of the combined facility into its own operation.

MOVING OUT A FUNCTIONAL AREA:

It's relatively easy to move an ancillary operation (e.g., returns processing and store supplies) out of a combined operation to create space. Excess reserve storage cartons or pallets can also be put into a satellite facility if tools are available to quickly identify and replenish necessary inventory each day.

SPLITTING OPERATIONS BETWEEN TWO BUILDINGS:

In some cases, entire inbound and outbound processes can be moved into separate facilities (as long as the systems infrastructure can support this). One client had maximized the capacity of its DC site but needed a substantial expansion. As a first step, the company modified the current building to enable it to handle all receiving and most of the company's reserve storage, and all picking, packing, personalization, and shipping operations were housed in a new facility located a mile away. This approach supported operations for several years, and a larger portion of reserve storage was later added to the new site.



CONCLUSION

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NEXT STEPS FOR DEVELOPING YOUR NETWORK STRATEGY.

Many companies get started by brainstorming how their future network might look or by comparing their network to their competitors. They might even begin some “back-of-the-napkin” analyses. But for most situations, there are limitations to these approaches to developing a network strategy.

To do it right, you need to analyze your DC holistically and explore all feasible options in depth. You also need to be able to answer “yes” to the following questions:

- Does your organization have the capacity to consider all of the necessary factors?
- Does your team have enough relevant first-hand experience to evaluate options, while considering your unique needs?
- Have you considered the costs to acquire network modeling software and develop your team?
- Will your team conduct network analyses frequently enough to maintain in-house modeling expertise? Does this require network updates annually, every three years, or every five years?
- Can your team conduct the network analysis while maintaining the necessary level of impartiality to address vested interests in one or more possible outcomes?

You may have the Stradivarius of network-modeling tools, but if you don't have a virtuoso playing it, you just end up with noise.





If you have a strong and deep supply chain analytics team, you may be able to conduct the network modeling in-house. Keep in mind that your conclusions will be scrutinized by the CEO, CFO, and board of directors as well as all of the VPs in your organization. But if you have the right team, you're considering a limited range of options, and the answer is clear, in-house network modeling may work.

Most companies, however, find they are better served by seeking outside counsel to conduct the network modeling. In partnership with North Highland, you'll have an experienced team that has analyzed dozens of other supply chain networks. You'll have a partner to help you answer the many questions you need to address and the support you need to put your network strategy into place on time and on budget. The result? A network that operates more effectively, gives you a leg up over the competition, and enables you to deliver greater service and outcomes for your customers.

ABOUT NORTH HIGHLAND

North Highland makes change happen, helping businesses transform by placing people at the heart of every decision. It's how lasting progress is made. With our blend of workforce, customer and operational expertise, we're the world's leading transformation consultancy. We break new ground today, so tomorrow is easier to navigate.

Founded in 1992, North Highland is an employee-owned firm - regularly named one of the best places to work. We have more than 5,000 consultants worldwide and 65+ offices around the globe. Meanwhile, we're a proud member of Cordence Worldwide (www.cordence.com), an international consulting alliance.

For more information, visit www.northhighland.com or connect with us on [LinkedIn](#), [Twitter](#) and [Facebook](#).

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STRATEGY

We design customized strategies to help clients achieve significant results while driving innovation to solidify the foundation for the future. With our deep knowledge of supply chain engineering, facility design, and labor management, we help clients address their most critical supply chain issues and offer holistic, end-to-end distribution performance improvement solutions to enable optimization and transformation.

TORRE CRUPIE

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Torre has nearly 40 years of management and consulting experience, focusing on distribution center design, supply chain improvement, and logistics network development. He has provided significant results for major retailers in key areas, including streamlined logistics, enhanced logistics-asset utilization, and reduced distribution labor costs.

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Randy has over 30 years of consulting experience in the retail and consumer products industry, specializing in supply chain strategy, facility design, and operational improvements. He has spearheaded projects for several national and global retailers, manufacturers, and vendors, developing strategies to increase overall productivity, reduce labor costs, enhance product flow, and improve management effectiveness.