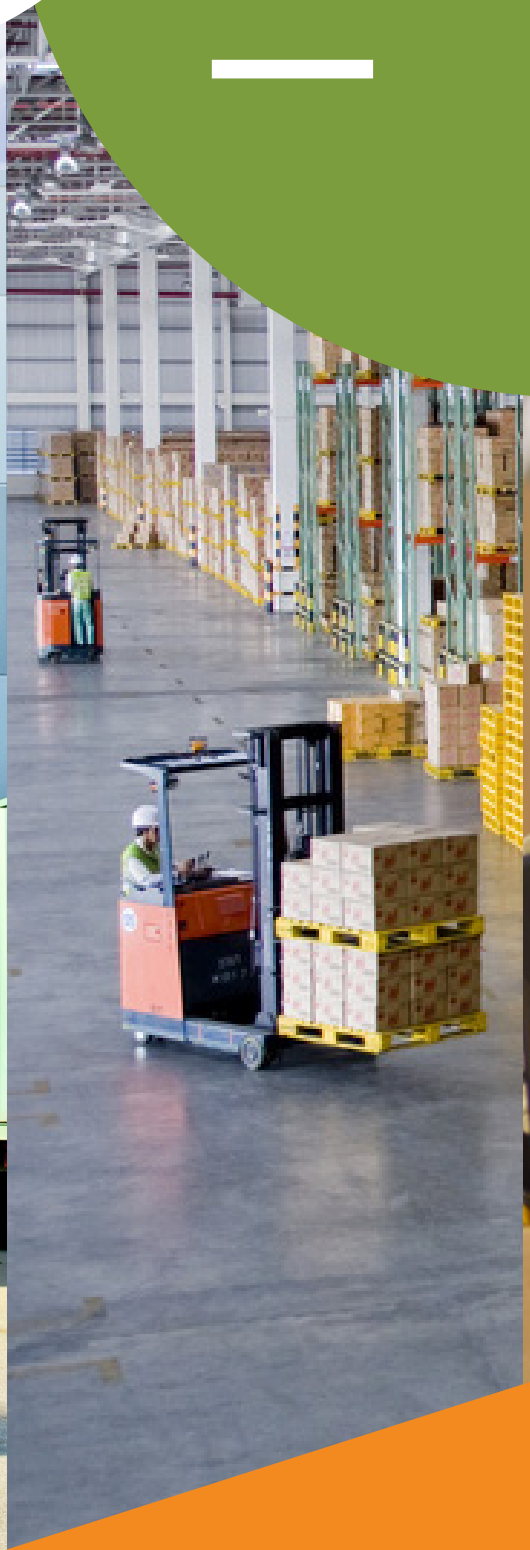
LIDD
SUPPLY CHAIN
INTELLIGENCE

INFRASTRUCTURE:

SUPPLY CHAIN'S MISSING LINK



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ABOUT THE AUTHOR

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Charles has been working as a supply chain consultant since 1998. He has worked with clients at all levels of the supply chain, from manufacturers to retailers, in a wide array of industries including food, pharmaceuticals, garments and construction materials.

He has extensive experience in supply chain strategy, technology, facility design & implementation and operations. Charles holds a Bachelor's degree in Mining Engineering from McGill University in Montreal.

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TABLE OF **CONTENTS**

INTRODUCTION

At the delirious height of the dot.com bubble, a company called Webvan sought to re-invent the grocery business by selling groceries on-line. It garnered enormous publicity, not to mention venture capital, and set out to rapidly expand from its base outside Silicon Valley to 10 cities across the United States. To do so, it needed a massive distribution infrastructure of warehouses and trucking fleets. It hired engineering-giant Bechtel and invested $1 billion to construct these warehouses that were bursting at the seams with the latest technology and miles of conveyor systems.

By 2001, Webvan had declared bankruptcy. Sales never reached the volumes that were needed to justify the massive investment in infrastructure.

This is the untold story of supply chain infrastructure and it will hopefully provide a new perspective with which to analyze and understand your supply chain.

At the time, Webvan was a cautionary tale that called into question the online grocery model (a debate that continues today despite successful e-grocers such as FreshDirect). The real lesson to be learned from the Webvan debacle is not so much about a failed business model as it is about the importance of managing supply chain infrastructure. When you sink too much capital into your infrastructure, you make it that much more difficult to turn a profit. The lesson here is that too much infrastructure can be fatal to your business.

1

WHAT IS **SUPPLY CHAIN INFRASTRUCTURE?**

Let's start with the term "supply chain"; Google a definition for the term and you will find dozens of answers. Here are a few:

Google

The sequence of processes involved in the production and distribution of a commodity

CSCMP

All activities in sourcing, procurement, conversion and logistics

Wikipedia
The Free Encyclopedia

System of organizations, people, activities, information and resources in moving products from supplier to customer

The movement of raw materials into an organization, the internal processing of materials into finished goods, and the distribution of finished goods to the end consumer

All of these are reasonable and appropriate definitions of the term "supply chain". If you were to survey these definitions as a group, and include other definitions that didn't make page 1 of the search results, you'd notice a common theme, they all talk about process, movement and activities.

There is a glaring and fundamental omission from these definitions, and that is the fact that processes, activities and movement in a supply chain all require a set of assets to support them. These assets are a company's supply chain infrastructure.

SUPPLY CHAIN INFRASTRUCTURE CONSISTS OF:

- **Facilities** required to process, manufacture, store and distribute products
- **Equipment** required to process, handle and transport products
- **Technology** required to plan, direct and execute the activities in the supply chain

Your infrastructure defines how your supply chain operates and determines how well it serves your company and its customers; it determines how quickly and efficiently products move through your supply chain; it defines the processes used to convert raw materials into finished products that you then deliver to the market.

My entire consulting career has been focused on helping companies grapple with their supply chain infrastructure. In that time, I have seen companies across a range of industries make the same mistakes over and over again. These syndromes include:

The Sore Tooth – Thinking about infrastructure only after capacity and performance problems become too painful to ignore

The Missing Link – Failing to recognize infrastructure as a foundational element of the company; affecting a wide swath of company activities from sourcing to sales and marketing

Separate Silos – Handing responsibility for different elements of infrastructure to different departments (e.g., facilities to Operations, or technology to IT) and letting them pursue separate strategies for each element

The Drunken Sailor – Squandering precious capital on infrastructure projects that look great in a press release but almost never provide the operating savings promised during the first pitch

If fewer companies make these mistakes, we would have stronger companies and a more prosperous economy. Hopefully, this eBook will make a small contribution to that goal.

2

HOW SUPPLY CHAIN INFRASTRUCTURE AFFECTS YOUR PERFORMANCE

INFRASTRUCTURE COSTS MONEY

After labor, infrastructure represents the second biggest expense in your supply chain, and is by far the largest fixed cost in your business. When it comes to fixed costs, your single biggest risk is having too much infrastructure. One of the most famous examples of this of course was the ill-fated Webvan that flushed a billion dollars down the drain 18 months after its IPO. There is also a risk associated with not investing enough in your supply chain infrastructure, which we will examine a bit further on, so keep reading.

INFRASTRUCTURE AFFECTS PRODUCTIVITY

As we mentioned, labor is the largest expense in your supply chain, but your infrastructure has an enormous impact on your labor productivity.

Undersized facilities and poorly configured material handling systems reduce productivity resulting in expensive operating penalties. Having inadequate IT systems also hurts productivity by incurring higher clerical and administrative costs.

Some of the telltale signs of an undersized infrastructure include cramped docks, products staged in the aisles, multiple SKUs sharing reserve locations and pick slots that are difficult to access. Each of these issues will result in excessive product handling and less than ideal product transactions. For example, your warehouse workers may look busy because they have to make two or three product moves in order to accomplish one real transaction.

We recently observed a foodservice distributor who had run out of pick slots, so they began creating pick slots on beams that sat six-and-a-half feet in the air. Pickers were forced to climb up on top of their pallet jacks to access these pick slots. This not only made picking unproductive, it also presented a huge safety risk for the workers.

INFRASTRUCTURE CREATES ERRORS

Errors in the supply chain can have expensive consequences, such as adjustments for inventory that disappears from distribution centers, or that simply expires while buried in the darkest corners of a warehouse. Errors create costs that, while measureable, can sometimes become lost in a thicket of P&L statements.

Do you know what it costs to process an error at your facility? These don't include the hidden cost of lost sales due to a customer having lost confidence in your company's supply chain.

Across the food manufacturing industry, too many companies have not made sufficient IT investments to address this issue. A recent example comes from a LIDD client in the fresh cut produce segment of the industry. In their operations, warehouse workers were not directed by any system when pulling raw materials for production. They consulted inventory tables and identified the appropriate lots (in FEFO rotation) to pull.

The process was cumbersome and slow. Moreover, it was fraught with errors, resulting in higher raw materials spoilage than was necessary. Inventory losses due to spoilage alone justified the investment in a warehouse management system that would direct workers' activities. If that wasn't enough, lots pulled for production were also recorded manually and logged in their ERP by clerical staff. All of these processes could be streamlined through the implementation of appropriate technology systems.

INFRASTRUCTURE ENABLES GROWTH

Supply chain infrastructure has a throughput capacity limit. That is to say, a given infrastructure can support only so much product volume. Once a company reaches that limit, it cannot grow no matter how compelling its product offering or effective its sales team.

> **One of the best examples of the relationship between infrastructure and revenue growth comes from the foodservice industry. If you are a foodservice distributor, your distribution center is your store – meaning there is a direct relationship between the size of your DC and the revenues you can expect to generate.**

One foodservice executive engaged us to perform an ROI on a DC expansion project because he knew that his facility was severely under capacity relative to its volumes and that his company was paying a large penalty in productivity losses as a result. Upon closer examination, however, it turned out that projected savings from improved labor productivity was not the primary criteria used to justify the expansion. The real benefit – almost 66% – came from the additional profit margin that would be made possible by an increase in capacity and top-line revenue growth.

3

SUPPLY CHAIN INFRASTRUCTURE ISN'T JUST ABOUT **THE SUPPLY CHAIN**

In the previous section, we looked at how supply chain infrastructure affects a company's performance in fundamental ways.

Let us now take a look at how supply chain infrastructure affects many other functions in a company.

ON THE FOLLOWING PAGES ARE FOUR SHORT STORIES TO ILLUSTRATE THESE KEY POINTS.

This new DC is empty now, but the buyers will fill it up in a few weeks.

This is a story that can be told almost anywhere, in any industry, following the completion of a new DC or expansion project. Your company undertakes a rigorous analysis of its needs, puts together 7-year growth projections and settles on a DC footprint to support that anticipated growth. Once open, your buyers take advantage of that increase in capacity for buying opportunities much sooner than anyone expects, and before you know it, the facility is full.

Without that capacity, buyers would have to pass up opportunities to lower the cost of goods and fatten your company's profit margins.

How many kinds of bacon do we really need?

A food wholesaler benchmarked its labor productivity against a peer group from across North America and the results were not very impressive. It ranked among the bottom third of the benchmark results. Moreover, warehouse supervisors complained that the facility was "out of slots" and couldn't keep up with all the new listings.

The company undertook a thorough analysis of its operations and determined that it had available storage capacity but no pick facing capacity. A warehouse expansion would be costly, but seemed necessary, but one analysis pointed in another direction.

It showed that the bottom 50% of SKUs contributed less than 1% to the total profit margin. The company could cut 7,000+ SKUs and would still be 99% as profitable.

So, rather than expand the facility, the company launched a SKU rationalization project. They reviewed all their product categories and determined where they offered too much variety. They eliminated redundant offerings and streamlined their categories. In so doing, the company avoided a needless expansion and instead re-engineered their pick line and shaved 10% off their picking labor costs

They didn't even look at our product. They just wanted to know if we could EDI.

The CEO of a small toy manufacturer returned home from a meeting with a potentially huge account. He had spent one hour with the senior buyer of a national retailer who was considering allocating a sliver of his company's planogram to this toy manufacturer.

"We need to get ready for a roll-out like we've never seen before," said the ebullient CEO to his team. "So they liked the product?" responded his team.

"I think so, but the funny thing is, he didn't really talk about the toy that much. He seemed much more concerned about whether we had EDI capabilities..."

The moral of this story is that it's not enough to have a great product and reliable supply if you hope to do business with major retail chains. To win business with the big boys, you must have the technological capabilities to integrate with their highly sophisticated and complex supply chain operations.

If we open up in Salt Lake City, the business is ours.

A long-time supplier of a major retailer, this particular bedding manufacturer had an opportunity to tap into a new category. The category was unique in that the retail units had much larger cubes than what the supplier had manufactured up until that point. The smaller cubed products could be shipped from one location in the Northeast without triggering unacceptable inbound transportation costs. The new larger products, however, could not be shipped to the west coast from their facility in the Northeast without breeching the retailer's allowable freight expenses (calculated as a % of the cost of goods).

The supplier performed a transportation analysis and built a business case to justify the establishment of a west coast manufacturing operation that would allow them to supply the retailer within their accepted freight envelope. Ten years later, the supplier managed to grow sales in that category and established operations in Texas as well as the southeast, enabling them to become the dominant supplier in this category for a dozen major retailers.

The lesson to be learned here is that while product quality and supply reliability were critical to this company's success, it was their supply chain infrastructure that gave them a distinct competitive advantage. Do similar opportunities exist in your industry and if so how are you capitalizing on them?

4

WHAT **CAN YOU DO** NOW?

Your company cannot run a world-class supply chain if your leadership team fails to appreciate the foundational role that infrastructure plays in that supply chain.

There are three key takeaways that will help you to develop the perspective that the most successful companies tend to adhere to.

1 **View supply chain assets - facilities, equipment and information technology - as a unified infrastructure.**

Don't make the mistake of clouding your judgment by segregating these assets and dividing authority between departments. For example, facilities and equipment typically falls under the domain of the operations department, who ultimately report to the COO. Meanwhile, information technology decisions are very often made under the watch of the CFO.

This strategy is flawed since the overall performance of an integrated supply chain depends on the combined performance of these assets. Think of it as a complex but single infrastructure.

2 **Always have a 7-year rolling plan for supply chain infrastructure.**

Understand the capacity limitations of your infrastructure and what is needed for it to support an ever-changing marketplace.

Understand that technology evolves rapidly and innovation in this area can impact both facility and equipment needs.

Before proceeding with a change in one part of your infrastructure, you should anticipate what effect it will have on the other links in the chain.

3 **Make sure you budget for annual capital expenditures that serve the long-term plan for your company's infrastructure.**

Supply chain infrastructure requires ongoing, annual investments to maintain its viability. One challenge may be that demands for capital investments at your company are spread across many functional departments. This decentralized approach makes it difficult, if not impossible, to see them as a whole.

Capital is precious and demands for it will come from all areas of your business. Make sure that supply chain infrastructure is neither starved nor stuffed. Maintain a healthy balance to ensure you are not over or under investing.

THE **TAKEAWAY**

We believe that your supply chain is much more than just a series of activities.

Your supply chain is a set of physical assets through which these activities take place. The attempt to manage complex supply chains with armies of people executing thousands of transactions each day may have made this “divide & conquer” organizational strategy seem sensible, but it’s no way to design and build an efficient supply chain.

We hope this supply chain manifesto has given you a different perspective and we would invite you to join us in our quest to define what “supply chain infrastructure” really means. It starts by looking at your supply chain infrastructure as a synchronized master plan, rather than a hodgepodge of one-off solutions to smaller problems that are not always aligned with your strategic goals.

Please share this with your team as well as with all the players in your value chain and join in the discussions on our blog and LinkedIn page.

We'd all like to **hear your opinions** and learn from one another's experiences. After all, in a world filled with noise, the only way we can win is to cut through the clutter and invest time and effort in **making real connections.**

CONTACT US

Schedule a **Discovery Call** to talk about your goals & define your needs

Learn More about becoming a client

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