



## Supply Chain Analysis

### Valuable Analytics to Optimize Your Network

As consumer buying behaviors and expectations evolve, the supply chains required to serve them are becoming increasingly complex. By taking an analytic approach to supply chain challenges, companies can make data-driven decisions that quantitatively evaluate the trade-offs between service and cost while maximizing profit and minimizing risk.



By partnering with an integrated supply chain solutions provider to perform these analytics as well as other supply chain management services, companies have found a valuable way to optimize their overall networks.



## Introduction

As consumer buying behaviors and expectations evolve, the supply chains required to serve them are becoming increasingly complex. Highly variable demand, unpredictable market conditions, supply disruptions and inclement weather are just some of the difficulties facing modern supply chains.

In addition to supply chains themselves becoming more and more complex, the decisions that need to be made to be cost effective, without sacrificing agility and service, are getting more intricate as well. These decisions cannot be made in silos anymore. Cross-functionally aligned decisions are now being based on advanced analytics.

By taking an analytic approach to supply chain challenges, companies can make data-driven decisions that quantitatively evaluate the trade-offs between service and cost while maximizing profit and minimizing risk. By partnering with an integrated supply chain solutions provider to perform these analytics as well as other supply chain management services, companies have found a valuable way to optimize their overall networks.

## Common Network Challenges

Balancing the conflicting goals of higher service and lower cost is a daunting task and often leaves supply chain professionals facing a wide array of both tactical and strategic decisions. The typical questions of “where”, “when” and “how many” can become overwhelming when considering the current landscape of supply chains which spans multiple geographies, distribution channels and varied service requirements.

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As supply chains grow in size and complexity, the opportunity cost of poor decisions grows as well. Not having inventory staged at the right time, in the right place and in the right quantity can lead to lost sales, obsolescence or costly expedited shipments. Not having distribution centers located in the necessary geographies and sized appropriately will result in poor asset utilization, excessive freight costs and undesirable service implications. The number of decisions and resulting consequences are seemingly endless, but designing a structured, analytic method for evaluating a supply chain can simplify and improve the decision making process.

## Analytic Supply Chain Solutions

- **Supply Chain Visibility** – The foundation of an analytic approach to supply chain design is visibility. Reliable and current data is absolutely critical to identifying available options and understanding the associated costs of potential decisions.

Data visibility refers to the details of infrastructure, behaviors and costs associated with all nodes of a supply chain. When looking up and down stream in a supply chain, it is important to understand key aspects such as where exactly product is being sourced from, whether it's shipped from a storage location or directly from a production facility, what the expected demand is, what service levels are expected, how much inventory/capacity is available and what the related costs are for each node. Those costs should be broken out into components so that companies fully understand how much cost is allocated to storage, handling, transportation and the cost of the product itself.

This level of granularity can be difficult to achieve, but it leads to significant opportunities and an increased ability to identify potential cost savings in a supply chain.

### CASE STUDY

#### How Supply Chain Visibility Can Yield Results

Through partnering with its integrated supply chain solutions provider on visibility initiatives, a company recently undertook an effort to collaborate with one of its suppliers to identify the major cost components associated with the pricing of the supplier's product (FOB/Freight/Storage/Handling). Through this process, it was determined that the company's products were shipping from forward storage warehouse locations, but the company had no visibility to the underlying logistics costs associated with this practice nor was it believed that the identified forward storage warehouse locations were optimal for the company's network.

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Storage practices were also discussed with the supplier, using a collaborative, cross-functional approach. It was learned that items were produced in multiple factory locations and there were many inter-plant transfers occurring in the supplier's network. By analyzing product volumes, along with transportation and warehousing costs, a variety of solutions were identified. Rather than using the supplier's forward storage warehouses, product was shipped directly from the production facilities to consolidation warehouses already being utilized by the company.

Changing where product was warehoused, aligning production facilities to consolidation points and eliminating unnecessary transportation costs yielded significant COGS savings on products from the supplier. The savings came from a variety of sources, including reduced storage and handling costs, improved product routing in the network, increased outbound product velocity from the consolidation points (as a result of the high volumes of the supplier's product) and increased distributor inventory turns.

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• **DC Network Design** – Some of the most difficult and critical questions to address in supply chain design involve determining how many distribution centers are required to service a network, where to place those facilities and in what size while minimizing total distribution costs. These decisions can be heavily influenced by a myriad of variables. Factors such as customer demand, service levels, growth assumptions and working capital constraints can all play a role.

A quantitative approach to solving this problem can identify the geographies that should be targeted to serve a customer base and also determine the necessary size of the facilities. By using a mathematical model, an integrated supply chain solutions provider can adjust each of these factors and understand the resulting trade-offs in cost and service levels.

Even though these types of strategic analysis will take some time to complete, the payback is significant. Given that studies have found that about 80% of transportation costs are predetermined by the design of the network, it is essential to revisit this question periodically. It is especially important to reevaluate the network design after major changes to the demand profile, mergers and acquisitions or major changes to the supplier or product base to

determine if the current design is still able to service the customer base in a cost-effective way.

• **Sourcing Optimization** – Projects that determine where to make or source product in a network can have varying levels of complexity. Product managers and buyers may frequently be tasked with making tactical decisions such as the evaluation of pricing adjustments or the review of production balancing. These groups are also faced with strategic problems that address long-term growth assumptions, geographic supplier alignment and capital investment. In either case, modeling tools and methods are available to create a data-driven decision making process to ensure supply while minimizing costs and satisfying business requirements.

By quantifying the costs associated with these variables, a supply chain solutions provider can evaluate trade-offs related to risk, growth and profitability in a way that aligns with a company's corporate strategy.

• **Channel Optimization** – The infrastructure of a supply chain will heavily influence product flows in the network. Should product move directly from a supplier to the customer? Should goods go through a consolidation center where they are mixed with other items? When should alternative modes of transportation be used?

Different situations will warrant varying the appropriate channel for distribution. As demand changes over time and new items are introduced into the system, channel optimization should be performed to consistently ensure that product is flowing most effectively.

Having a structured method for evaluating and assigning channels will create consistency and lessen redundancy in the supply chain planning process.

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## The Value of Supply Chain Analytics

Building a comprehensive toolkit of analytic processes is a powerful asset to strengthen a supply chain and can produce significant advantages.

- **Increase supply chain agility** – Create and maintain a supply chain that can adapt to changing market conditions
- **Empower unbiased, data-driven decision making** – Remove guesswork by making decisions based on quantitative analysis
- **Evaluate ‘what if’ scenarios** – Understand the impact of changes in the network before they happen and the costs associated with contingency planning and risk mitigation
- **Enable continuous improvement** – Build standard processes that establish an environment of ongoing advancement through structured analysis
- **Align supply chain operations with business strategy** – Create a supply chain that supports the strategic goals of the company
- **Evaluate supply chains using a holistic approach** – Make decisions with the understanding of how they will impact the entire supply chain, not just a single node

## Conclusion

Supply chains of today continue to advance beyond the supply chains of yesterday. As consumer buying behaviors and expectations evolve, supply chains are not only increasing in their level of complexity, but more importantly, are increasing in their ability to add more value to companies by delivering products more responsively while driving efficiencies and minimizing network costs.

Supply Chain Analysis is a valuable tool in optimizing a complex supply chain. Leveraging the expertise of an integrated supply chain solutions provider to assist in this process is game changing as an emphasis on data analytics to support cross-functionally aligned decision making can yield favorable results and deliver competitive advantages.

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## About Armada

Armada creates innovative, fully integrated supply chain solutions that deliver competitive advantages and improve business performance for its clients.

Welcome to a better way.

Through its long tradition of partnering with clients, Armada has become one of the largest fully integrated logistic providers to the restaurant industry, in addition to serving broader industries, with operations and offices around the country. Current clients range from Fortune 500 companies to privately held and family-owned businesses. Armada's business model is founded in a deep-rooted commitment of extraordinary service to its clients by providing outsourced logistic solutions that create smaller, smarter and more agile networks.

**We believe** that there's a better way to manage our clients' supply chains. A better way rooted in simplicity, transparency and extraordinary service to our clients.

**We are changing** the way supply chains are managed – now and for the future – through innovation and collaboration with our clients.

**We provide** logistic solutions that create smaller, smarter and more agile supply chains that adjust to our clients' evolving marketplace demands.

**Learn more about how Armada can be your competitive advantage.**

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