



## Network Optimization

### What is Supply Chain Network Optimization?

The term “Supply Chain Network Optimization” is thrown around in many contexts and is sometimes misunderstood. Put simply, supply chain network optimization is the process of determining the ideal network configuration (e.g., number of facilities and their location) and product flows that satisfy the overall corporate strategy, customer demand, and customer service requirements.

**Network Optimization is a key decision making tool that addresses multiple strategic objectives.**

- Are you experiencing high overall supply chain costs in any specific cost bucket like transportation, inventory, or warehousing?
- Are your customer service levels falling short of expectations?
- Do you need to determine which plants or warehouses are the best bets to expand or consolidate to support future business levels?
- Has your network evolved somewhat irregularly over time, and perhaps deserves an end-to-end rationalization?
- Are you expecting merger, acquisition, or divestiture activity that may offer potential synergies or require realignment for operational efficiency?

Supply chain network optimization tackles these questions with thorough, repeatable, and data-driven reasoning to support conclusions. Network optimization can relieve pain in the end-to-end supply chain through cost and service improvement.

While most companies acknowledge the importance of aligning supply chain strategy with corporate strategy for successful operations, few formally develop and analyze strategy using supply chain network optimization methods. Analysts claim that as much as 80% of supply chain costs are pre-ordained by the network design, thus a focus on optimal network design is a high-value decision. Network optimization answers and validates short and long term multi-million dollar strategic questions. In the global supply chain, characteristics such as changing customer demands, inconsistent supply base, cost pressures, and fuel and currency fluctuations are prompting companies to re-think their supply chain on a regular basis. To

stay competitive and proactively make decisions, use network optimization to model supply chain changes and evaluate the impact on business.

In our view, network optimization is one of the biggest analytics opportunities in supply chain. Bringing a structured, strategic approach to foundational supply chain decisions also drives analytical capability and data-driven competency that improves other strategic and tactical decision processes. Adopting network analysis best practices helps develop detailed insights into cost structure and product flows, and augments ability to analyze and improve supply chain operations.

## How did you get to where you are today?

Spinnaker has seen many companies attempt to adopt network analysis but lack a well-defined methodology and framework. Often, companies perform a few incremental and sometimes random exercises that are vaguely defined, inconsistent, and difficult to reproduce. One of the key opportunities of network optimization is the holistic yet repeatable approach it can bring to the decision making process, but this requires an end-to-end methodology to define scope, gather data and develop models, and evaluate alternatives in a thoughtful way.

## What are the Benefits of Network Optimization?

While many executives understand the benefits of network optimization to some degree, below we offer some specifics of what objectives can be addressed and the quantifiable impact that can be achieved.

Strategic Objectives	Impact	Considerations
Cost Savings	<ul style="list-style-type: none"> <li>5% - 20% reduction in costs due to design</li> <li>3% - 25% reduction due to sourcing</li> </ul>	<ul style="list-style-type: none"> <li>Identified trade-offs between transportation, inventory and warehousing</li> <li>Optimized size, number and function of facilities</li> <li>Rationalized number of suppliers</li> </ul>
Service Improvements	<ul style="list-style-type: none"> <li>20% - 60% improvement in transit times</li> <li>Right product at the right place at the right time</li> </ul>	<ul style="list-style-type: none"> <li>Location of facilities serving customers in a service competitive manner</li> <li>Inventory strategies to reduce stock-outs while minimizing safety stock</li> </ul>
Market Expansion	<ul style="list-style-type: none"> <li>Profitable growth into new and emerging markets</li> <li>Identified fully burdened landed cost and targeted sales markets</li> </ul>	<ul style="list-style-type: none"> <li>Modeling cost of competition to determine areas of penetration</li> <li>Forecasting of costs and margin in new markets</li> </ul>
Margin Improvement	<ul style="list-style-type: none"> <li>1% - 5% percent increase in margins</li> </ul>	<ul style="list-style-type: none"> <li>Identification of unprofitable markets and product families</li> <li>Allocation of product to maximize profits</li> </ul>
Asset Rationalization	<ul style="list-style-type: none"> <li>Reduction or expansion in plants, production lines and warehouses</li> <li>Evaluate underperforming or non-core operations</li> </ul>	<ul style="list-style-type: none"> <li>Determine cost effective and productive assets</li> <li>Right size facilities and capacities</li> </ul>
M&A Due Diligence	<ul style="list-style-type: none"> <li>Supporting Analytics to validate deal assumption</li> <li>Avoidance of bad deals</li> </ul>	<ul style="list-style-type: none"> <li>Can facilities support growth assumptions</li> <li>Are operating costs valid</li> <li>Are synergies real</li> </ul>

## Our View on the Right Approach to Network Optimization

If you perceive network optimization as just a modeling technique, you may be missing much of the value. We view network optimization as more than just a modeling tool; it spans process, people, and tools, and requires effective integration of these three elements. Performing network optimization without a well-defined business process, or without organizational support and readiness, will degrade the benefits of your investment in the capability. Establishing a standardized process improves turnaround time and quality of results you can achieve from network optimization. We emphasize integrating the process with the network optimization tool for successful implementation.

Network Optimization Capability Maturity Model				
	REACTING STAGE 1	ANTICIPATING STAGE 2	ADAPTING STAGE 3	EXCELLENCE STAGE 4
Business Policy	<ul style="list-style-type: none"> <li>One time analysis in 3-5 years with specific objective in mind</li> </ul>	<ul style="list-style-type: none"> <li>Yearly analysis to solve specific problems</li> </ul>	<ul style="list-style-type: none"> <li>Multiple analysis to support more than one corporate group</li> </ul>	<ul style="list-style-type: none"> <li>Continuous on-going analysis to support multiple corporate groups</li> </ul>
People	<ul style="list-style-type: none"> <li>Outsourced</li> <li>Local functional</li> <li>No expertise</li> </ul>	<ul style="list-style-type: none"> <li>Outsourced with some internal support from functional team</li> <li>No expertise</li> </ul>	<ul style="list-style-type: none"> <li>Internal team with little or no support from outside</li> <li>Limited expertise in modeling and data management</li> </ul>	<ul style="list-style-type: none"> <li>Internal team with expertise in both modeling and business processes</li> <li>Dedicated support from other functional groups like IT, Finance</li> </ul>
Process	<ul style="list-style-type: none"> <li>No consistent approach</li> <li>Approach defined as needed for specific project</li> </ul>	<ul style="list-style-type: none"> <li>Some consistency and repeatability in parts of the methodology</li> </ul>	<ul style="list-style-type: none"> <li>Standardized and repeatable methodology</li> <li>Lack of best practices in data management</li> </ul>	<ul style="list-style-type: none"> <li>Best practices implemented in the methodology</li> <li>Standardized and structured methodology to solving problems</li> </ul>
Technology	<ul style="list-style-type: none"> <li>Lease the modeling software</li> <li>Spreadsheet analysis</li> </ul>	<ul style="list-style-type: none"> <li>Leased or purchased modeling software</li> <li>Use of spreadsheets for analysis and data management</li> </ul>	<ul style="list-style-type: none"> <li>Purchased and partially customized modeling software</li> <li>Use of spreadsheets and database for data management</li> </ul>	<ul style="list-style-type: none"> <li>Completely customized modeling software</li> <li>Established tools for data collection, preparation and reporting</li> </ul>

Spinnaker has seen network optimization in companies at different levels of maturity and functionality. Adoption of network optimization is steadily increasing and has been moving up the maturity curve, especially in the last few years, as companies are recognizing its value. Network optimization is a core part of the decision making process. Whatever level you may be on the maturity curve, network optimization has huge potential to improve your supply chain.

### Get Started Today

Take an honest look at where you may be on the maturity curve. Knowing where you want to be is the first step in moving your organization forward. While it may seem like an insurmountable task to build or change such a process, the team at Spinnaker brings decades of experience in network design process, the technology and tools that enable it, and the change management steps necessary to be successful.

Spinnaker offers several options to help you get started such as a Detailed Process/Tool Assessment, or a Proof of Concept which all drive to a detailed roadmap that enables your organization to successfully move down the path.

**Process/Tool Assessment** - One common approach is to conduct an assessment to understand what processes, roles and responsibilities, and tools are in place. A gap analysis is a logical next step to develop an improvement roadmap.

**Proof of Concept** - Another option is to demonstrate a proof of concept using a network optimization tool. By modeling a subset of your real data that is representative of a complete data set, your team can quickly determine how network optimization can deliver value to your business. Proof of concept also helps in understanding network optimization methodology, data requirements, and the results it can achieve to meet your business objectives.

We encourage you to start by having a conversation with Spinnaker to hear more about our experience, and to discuss ways that supply chain transformation and network optimization can take your organization to the next level.

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## About Spinnaker:

Spinnaker is a supply chain services company that helps clients grow, manage risk, reduce costs, and improve customer service by developing world-class supply chain capabilities. Our services help clients develop the right supply chain strategy for their business challenges and implement the process and technology solutions to improve Demand/Supply Planning, Procurement and Sourcing, Logistics and Warehousing, and Reverse Logistics business performance. Spinnaker offers a unique service delivery model that combines the strength of deeply experienced management and technology consultants with a seasoned team of business process outsourcing (BPO) and 3rd-party logistics (3PL) professionals. Founded in 2002, Spinnaker has offices in Boston, Columbus, Denver, Houston, Memphis, Pittsburgh, London, and Singapore.

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