

Agile Network Design & Analysis

Industries We've Served

- Consumer Goods
- Manufacturing
- Retail Grocery
- Food Wholesale
- Convenience
- Retail
- Food Service
- General Merchandise
- Health & Beauty Care
- Pharmaceuticals
- Hardware
- Building Supplies
- Small Appliances
- Furniture
- High Tech
- Video and Audio Products
- Safety Supplies
- Packaging
- Apparel
- Electronics
- Office Supplies

Supply Chain Systems Ltd. (SCS) is a specialized consulting firm that assists manufacturers, retailers, and distributors in logistics network analysis, design and planning.

Agile Network Design & Analysis enables clients to make faster and better logistics decisions, which is achieved through unique fact-finding capabilities and a breakthrough process.

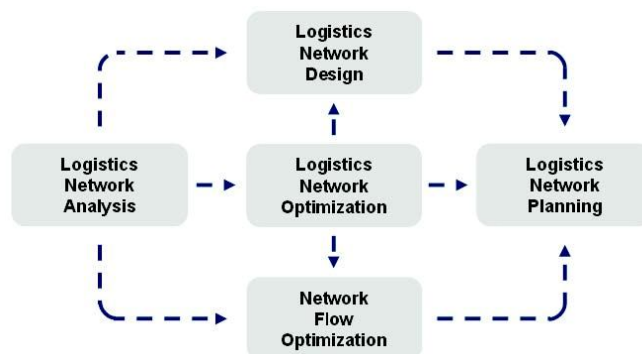
Agile Network Design & Analysis

Agile Network Design & Analysis is an integrated process that can analyze, design, implement, and optimize complex distribution networks by blending leading third party optimization technologies, proprietary modeling tools and a methodology that has undergone ten years of continuous refinement.

Benefitting from the cross-industry experience of logistics practitioners on data-driven assignments at the strategic, tactical, and operational levels, Agile has been designed to leverage transactional data commonly available at most companies to create a seamless network planning solution.

Developed in response to the shortcomings of conventional logistics network design, Agile Network Design and Analysis is the first integrated solution to:

- Analyze and optimize existing network operations
- Perform logistics network design with tactical accuracy
- Optimize merchandise flows within an existing network
- Link network planning and design to implementation



Standard Business Analysis Areas

Demand/Supply Profiling & Analysis

Vendor Profiling
 Customer Profiling
 SKU Profiling
 Temporal Profiling
 Order Profiling

Network Design Analysis & Optimization

Network Design Effectiveness
 Customer Assignment Optimization
 Product Stocking Optimization
 Product Flow Analysis & Optimization
 Outsourcing Performance Analysis
 Time-Based Performance Analysis

Warehousing Analysis & Optimization

Layout Analysis
 Storage Density Analysis
 Slotting Effectiveness Analysis
 Dock Utilization Analysis
 Productivity Analysis
 Storage & Handling Systems Analysis
 Cycle Time Analysis
 Process Flow Analysis

Transportation Analysis & Optimization

Route or Lane Activity Profiling
 Carrier Activity Analysis
 Utilization Analysis
 Load Profiling & Analysis

Inventory Analysis & Optimization

Temporal Profiling
 Inventory Turn Analysis
 Excess Inventory Analysis

Service Level Analysis & Optimization

Delivery Frequency
 Order Lead Time
 On-Time Delivery Analysis
 Fill Rate

Financial Analysis

Activity-Based Costing Analysis
 Transportation Cost Analysis
 Warehouse Costs Analysis

Agile | Logistics Network Analysis & Optimization

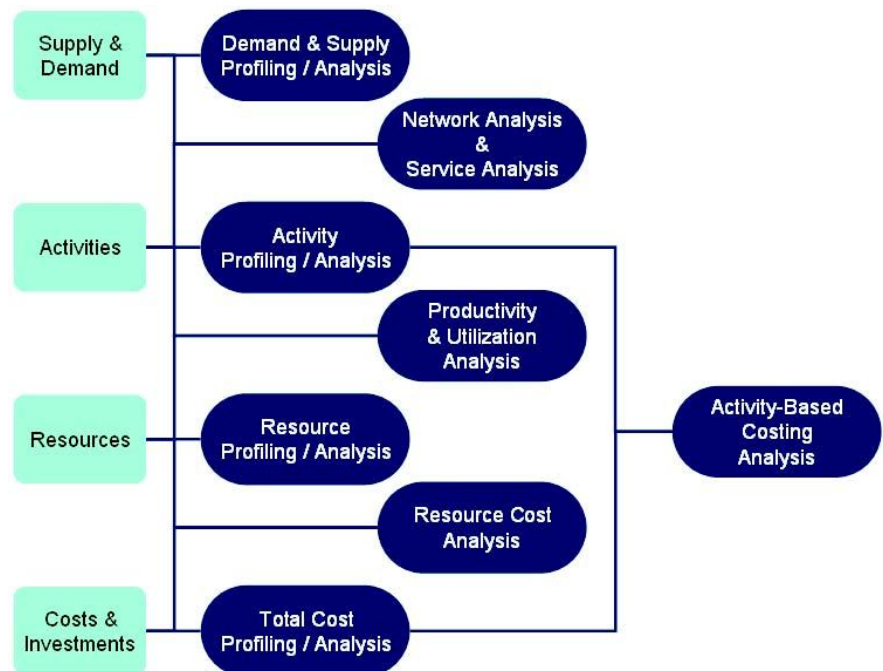
Supply Chain Systems Ltd. draws on the power of Agile to analyze and optimize network operations as either an independent performance assessment or a precursor to logistics network design.

Avoiding the disparate spreadsheet and relational database analyses that often result in overly simplified solutions, Agile applies logistics analytics and business intelligence tools that capture and retain complete sku, vendor, customer, and order detail over at least one year of logistics operations.

Then, by synthesizing feedback from site visits and interviews to leverage a standard business analysis that detects insight-producing trends and interrelationships, SCS is poised to identify opportunities and recommend network-wide changes that will produce lasting value.

Network Analysis Objectives

- Analyze and optimize existing network operations
- Present a fact-supported explanation of performance
- Quantify opportunities for improvement
- Measure resource and capacity utilization
- Illustrate the relationships between financial and non-financial metrics
- Develop the business rules that will drive the network design



Agile | Logistics Network Design

Agile is the first logistics network design process to model and evaluate alternative logistics networks using bottom-up modeling principles.

Departing from convention, Agile no longer relies solely on Supply Chain Design Software to identify the final network design. Rather, Agile counts on the expertise of the network designer to deploy integrated proprietary and third party software tools (Supply Chain Design Software being one supporting tool) within an iterative knowledge discovery process that zeroes in on the optimal solution.

This way, the network designer is positioned not only to model more accurately, but also to select from a broader range of relevant strategies and tactics towards a more comprehensive solution.

Sample Strategic & Tactical Network Questions

Logistics Network Structure	Where should current and new facilities be located? What would be the facility mission? As the result of a merger, what would an optimal, combined logistics network look like? How would a national/regional or fast/slow network impact capacity and service levels?
Facility Layout & Expansion	Could modifications to existing facilities influence the network design? How much can sku, cube, or throughput capacity be increased through a facility reset or expansion? Should slotting rules be reviewed as part of the redesign?
Storage & Handling Systems	How would the consideration of new storage & handling systems improve the network design? Would the associated investments be justified by labour savings and building costs reductions? What are the trade-offs between automation or mechanization vs. conventional storage & pick solutions?
Customer Assignment	Should customers be served from a single facility? More than one facility? Should customer assignment be time or distance-based? Route-based? Some other factor?
Product Stocking	What factors should be considered to determine product stocking locations? Temperature? Movement Class (Cube, Cases, Lines, Units)? Handling Characteristics? Vendor? Can an item be stocked both regionally and nationally?
Inbound/Outbound	Should a conversion from LTL to pool distribution be considered? Should initial product shipments be delivered directly from Port to store? How should goods flow inwards from Port? Direct to customer? Regional DC? Remain at Port DC? Could the use of consolidation centers reduce inbound costs? Should vendors deliver to a single DC or to multiple DCs?
Channel or Product Flow	How would the conversion from DSD to distribution influence the network design? Should National deliveries be delivered direct to customer? Cross-docked through Regional? Should customer-sku flow strategies change by season?
Service	Should existing service levels be maintained? Can order lead time, delivery frequency, delivery days be modified?
Procurement	How will alternative designs influence product spend? Discounts, allowances, rebates? Would a switch from distributor to manufacturer be possible by centralizing product lines?
Outsourcing	Should certain transport lanes or facilities be outsourced? How would the location of different TPL facilities alter the assignment of customers?

Agile | Network Flow Analysis & Optimization

Agile can be applied to support any decision that examines product and cost flows within the network.

Using Agile's activity-based resource-driven costing methodology, Agile can capture the complexity of any network to analyze and optimize product flows. Geared especially for resource-sensitive environments like logistics networks, Agile supports flow-based decisions by employing a flexible analytical framework that accommodates diverse activity, resource, and cost drivers.

Flow Analysis Areas

- Find the optimal routing from supplier to customer from a cost and a capacity perspective
- Evaluate channel decisions such as direct-store-delivery vs. retail/wholesale distribution
- Determine the marginal activity, resource, and cost impacts of alternative flows
- Calculate or minimize landed costs or cost-to-serve by vendor, sku, customer
- Maximize sku, vendor, customer profitability
- Develop rational cost assignment policy to manage order, sku, and customer variability



Agile | Logistics Network Planning

Network Design & Optimization efforts can accrue benefits only after changes are implemented, so the ability to plan and implement quickly and effectively is critical. Moving from network design to implementation often involves steps such as board approval (e.g., business case), network planning, detailed design, and implementation planning. Success within each step relies strongly on well-prepared and well-communicated plans.

Agile's unique capability to move seamlessly from design through the successive planning stages ensures companies can effect positive change quickly. Agile automatically streams outputs from logistics network design to support a planning process that requires fewer assumptions and counts on the same project team, process, and principles. No project hand-offs, no due diligence surprises - only confident and effective decision making.

Common Network Design Outputs supporting Logistics Network Planning

Demand & Supply Planning	For each growth scenario, ship-to location demand at the sku-day level For each growth scenario, vendor-sku volumes by planning period
Network Planning	Assortment/customer/vendor/order activity profiling by facility and period Network design rules by alternative and growth scenario <ul style="list-style-type: none">• Product stocking policy• Customer assignment policy• Vendor assignment strategy• Product flow from vendor/production source to consumption• Inventory stocking policy per facility-sku combination
Facility Planning	Facility sizing & capacity Storage & material handling system requirements Staffing requirements Equipment requirements Year and location in which effective capacity will be exceeded Inventory requirements
Transportation Planning	Lane & route requirements
Financial Planning	Proforma project income statements & statements of cash flow Financial analysis using company-specific metrics Cost-benefit analysis Ranking of alternative network strategies based on qualitative and quantitative criteria Options ranking if non-logistics costs were considered? Product cost impacts?
Scenario Planning	For each identified growth scenario, what would be the optimal network design? For complete range of growth scenarios, what would be the optimal network design? How do service level changes (i.e., delivery frequency) influence the optimal design?
What-If/Sensitivity Analyses	How sensitive is the optimal network design to external factors such as fuel cost increases?
Constrained Decision Support	Identifies optimal network design that must meet specific business condition <ul style="list-style-type: none">• What if a specific investment ceiling was imposed?• No major investments for next two years?• What if no change to storage & handling systems were permitted?• What if current service levels had to be maintained?
Implementation Planning	Implementation road map with facility & product move plans Decision timing requirements (immediate, date-specific, event-triggered) Investments to be made immediately, regardless of growth scenario Investments hinging on realization of a specific growth scenario

Primary Data Sources

Order Management System
Warehouse Management System
Transportation Management System
Inventory Management System
Automatic Data Collection Systems
(e.g. RFID, GPS)
Yard Management System
Labour Management System
Dock Management System
Warehouse Control System
Automated & Mechanized Picking
Technologies
Sortation System
Forecasting System
Computer-Assisted Ordering
Payroll Hours
General Ledger
Engineered Labour Standards
Assortment Management

The Power of Agile Network Design & Analysis

While Supply Chain Systems Ltd. can provide effective support in various logistics consulting capacities, the firm distinguishes itself within the domain of logistics network analysis, planning, design, and optimization.

SCS offers a unique value proposition by combining world-class logistics capabilities with powerful analytics. Our competence stems from the mutually reinforcing relationship between SCS logistics expertise and a proprietary process called Agile Network Design & Analysis.

Benefits of SCS & Agile

SCS' application of Agile delivers a series of compelling benefits to clients reviewing their logistics network:

- Network analysis, not only increases network design modeling accuracy but also identifies short term opportunities that can help avert major investments
- Offers complete logistics network design capabilities with higher bottom-up accuracy
- Is equally effective at optimizing warehouse and transportation operations because it is based on the same analytical process
- Seamlessly links network analysis, concept design and network planning to detailed design and implementation
- Creates a robust process that jointly supports strategic and tactical decisions
- Encourages full client participation through Agile's traceability and process clarity
- Achieves results more quickly, more accurately and with fewer hand-offs
- Engenders the confidence of executives, managers, and network designers alike due to its logic, transparency and comprehensiveness
- Fully leverages the transactional data which companies capture and archive, but fail to exploit for logistics planning
- Models networks by period to improve decision timing, evaluates resource utilization by year, and thereby postpones investments until they become necessary
- Designs solutions that are specifically structured to maximize shareholder value
- Adapts flexibly to new data sources and detailed analytical requirements whenever the opportunity arises

Years ago, the Agile process would have been too costly or unmanageable due to a lack of transactional data. Today, with accurate data widely available and powerful desktop computing systems easily capable of handling the largest databases, Agile raises the bar in logistics network decision-making.

Whether you are attempting to make a time-sensitive decision or simply trying to make the best decision, SCS can tailor Agile to deliver uncommon value.

Contact us to determine if Supply Change Systems and Agile can become your competitive edge.