

How to Use Supply Chain Design to Craft Successful M&A Activities

Mergers and acquisitions (M&A) present an incomparable number of options for the design of the new organization's supply chain; a staggering percentage of initiatives fail to meet executive and shareholder expectations. Supply chain design technology enables companies to model their supply chains, evaluate alternatives, optimize the structure and simulate multiple scenarios in order to predict the resulting operational performance of the merged organizations.

Tremendous Opportunity; Hefty Risk

Global political and economic uncertainty may persist, but global M&A activity remains steady, even increasing in some regions such as the United States and Asia-Pacific region. M&A deal volume and deal value in the U.S. rose 6 percent from 2011 to 2012, from 9,831 transactions to 10,419. U.S. deal value increased even more—up 22 percent from \$1.09 trillion to \$1.33 trillion¹.

Despite the increasing numbers, failure rates for M&A initiatives are extremely high. Depending on which report you consult, M&A initiatives have a failure rate of anywhere between 50 and 85 percent. Failure to consider the synergies and redundancies of the end-to-end supply chain of both companies is arguably a top contributor to the shortfall. Redundant facilities, assets, suppliers, customers and products can put a significant drag on profitability and efficiency. Furthermore, many deals fail to look beyond the value that justified the transaction to find new sources of synergies and value. Due diligence in most deals can overlook as much as 50 percent of the potential merger value².

It's no wonder that, while many executives are enthusiastic about M&A deal potential, their boards are hesitant to act because of lack of clarity on how the company will successfully manage an ambitious deal. How can businesses improve their chances for M&A success and reduce the inherent risk?



Use modeling to identify the best strategy for combining supply chains

Use supply chain modeling to effectively:

- Plan M&A strategy
- Optimize the new supply chain
- Design a future supply chain
- Predict supply chain performance

Apply Supply Chain Design Across M&A Activities for a Better Future State

Supply chain design technology enables companies to model their supply chains, evaluate alternatives, optimize the network structure and simulate multiple scenarios in order to predict the resulting operational performance of the merged organizations. There are opportunities to leverage modeling across all stages and types of M&A activity, including:

- Pre-Merger
- Post-Merger
- Divestiture/Spin-Off

Supply chain design technology enables companies to build models that include all of the potential inter-related operations and incorporate time and variability in order to identify the best M&A opportunities and the resulting strategy for combining the organizations. This white paper will review each of these three unique M&A activities and recommend supply chain modeling solutions, along with case examples, that can be applied to help businesses visualize, analyze and optimize current and future-state supply chains.

PRE-MERGER ANALYSIS

The pre-merger phase is uniquely challenging in that access to data for potential markets and acquisition/merger targets is often difficult to access. Strategy building and decision making relies heavily on assumptions rooted in available data. Companies can use supply chain network models to visualize and analyze M&A strategies and perform critical sensitivity analysis on key assumptions.

Using modeling and supply chain design during this critical phase gives companies the insight and decision support needed to:

- Avoid costly mistakes such as over-estimation of potential synergies
- Compare alternative M&A targets
- Analyze the most effective strategy for entering a new market

EXAMPLES

PRE-MERGER EXAMPLE 1: WHAT IS THE REAL OPPORTUNITY FOR SUPPLY CHAIN OPERATIONAL EFFICIENCY?

The assumptions executives and financial analysts make with regards to operational efficiencies often fail to take into account the inherent constraints associated with two corporate supply chains. By modeling the footprint and product flows, including constraints such as capacity limitations, product handling, sourcing policies and facility leases, a supply chain designer can more accurately identify the true opportunity for operational efficiencies—information that can be extremely valuable in pre-merger valuations.

PRE-MERGER EXAMPLE 2: WHAT COMPANIES ARE THE BEST M&A TARGETS FOR ENTRY INTO A NEW MARKET?

Acquisitions are often made to help a company enter into a new market including a new product category, a new customer base, or an entirely new geography. By creating a model of the existing corporate supply chain, then overlaying the supply chain footprints of potential M&A targets, executives can evaluate the trade-offs including market coverage, operational redundancies and total combined cost. This information can prioritize acquisition candidates and lead to more informed negotiations with the chosen company.

POST-MERGER ANALYSIS

Once an acquisition has happened, it is often up to the supply chain executives and their teams to help realize the operational efficiencies promised in the board room.

With two unique, complex operations often including overlapping assets, products, customers and suppliers, this is not an easy task. Supply chain modeling and design is essential to help make sense of this array of possibilities.

The benefits of modeling and supply chain design at this phase include:

- Finding short-term improvements with limited disruption
- Simultaneously analyzing big-win but potentially more disruptive changes
- Creating a more accurate projection of cost savings and operational efficiencies that can be reported to executives, the board and the investors

EXAMPLES

POST-MERGER EXAMPLE 1: IDENTIFYING THE IMMEDIATE, QUICK-WIN OPPORTUNITIES

Following the merger, executives want to show some “early returns” to (1) prove the wisdom of the acquisition, and to (2) buy time so that they can hopefully achieve the lofty goals of complete operational efficiency. Supply chain designers can model and optimize the supply chain networks of each individual company to identify quick-wins or “low-hanging fruit” and locate opportunities to share assets without significant structural redesigns or capital expenditures, and with minimal disruption to the newly-merged supply chains. These opportunities often represent millions in annual cost savings and are relatively easy to implement.

POST-MERGER EXAMPLE 2: DEVELOPING THE COMBINED SUPPLY CHAIN ROADMAP

Following initial optimization of the individual supply chains, the company can determine the best way to merge them. Site selection and asset rationalization decisions have the potential to save—or cost—a merged company tens of millions of dollars. Supply chain modeling and design can help companies identify the optimal footprint (i.e. number and location of facilities, production capacity, suppliers, transportation assets, etc.) by evaluating all the potential options and required capacity over a three, five or even 10-year time horizon. This enables companies to create a structured long-term plan for successfully combining the two companies’ supply chain operations to achieve the optimal level of efficiency.

DIVESTITURE/SPIN-OFF ANALYSIS

In a divestiture or spin-off scenario, previously shared resources need to be separated, manufacturing and distribution capacity is reduced and shared customers and suppliers may need to be allocated to one or the other entity.

Supply chain modeling can be employed in these situations to enable data driven decisions on which sites, products, customers and suppliers to keep and which to eliminate, as well as for costing of supply chain operations with new facility and lane volumes and capacities.

The benefits of using detailed supply chain modeling during a divestiture or spin-off include:

- Identification of the capacity requirements and product flow volumes for the resultant business
- Data to drive the negotiation of new business terms with transportation service providers and suppliers
- Implementation timeline for the transition from shared assets and resources to independent status

EXAMPLES

DIVESTITURE EXAMPLE 1: RIGHT-SIZING THE NEW SUPPLY CHAIN

Corporate supply chains are typically designed to handle a certain volume of products flowing from suppliers through to end customers. This design includes the footprint of facilities and policies around sourcing, inventory and transportation. When a business unit or product line is divested, the existing supply chain likely requires “right-sizing”. Supply chain modeling and optimization can help determine the proper design for the new remaining network, and can help define which assets to keep and which to eliminate.

DIVESTITURE EXAMPLE 2: HOW WILL THE REMAINING SUPPLY CHAIN PERFORM?

The new supply chain will be responding to a different set of demand signals, with different volumes and order patterns. Supply chain designers can create a model of the new network and run the remaining orders through a simulation to help predict how that new network will perform under real-life conditions. A simulation analysis can provide detailed metrics on capacity requirements, shipment volumes, on-time deliveries and inventory levels to validate the design of the new supply chain network.

Designing a Tax-Efficient Supply Chain

During M&A activities, it is imperative to consider the tax implications of alternate geographies and cities for potential facility locations, as well as the most tax-efficient location for company headquarters.

Modeling technology allows the capturing of tax and duty-specific parameters as well as generating optimal network locations that take tax and duty into account. This method applies tax and duties when products are transferred across regions within or outside of a company, leading to network decisions supporting higher margins and/or lower costs.



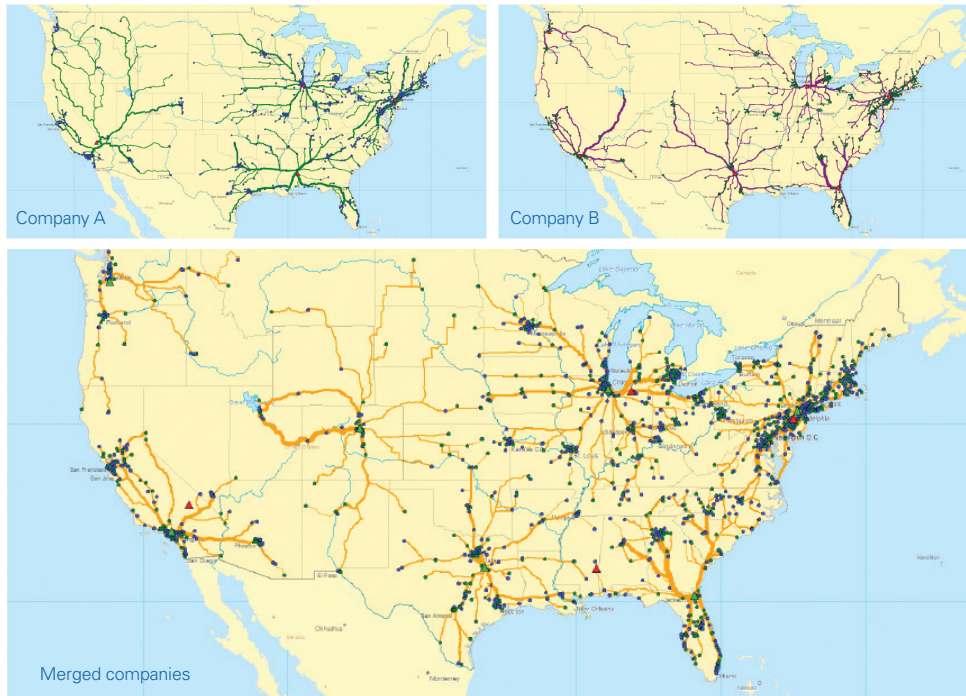
Optimized network without tax considerations



Tax-efficient network

Modeling a Merger

Supply chain design enables companies to create a structured long-term plan for successfully combining the two supply chains to achieve the optimal level of efficiency. This example shows how models of the two individual supply chain operations can be combined and optimized to recommend a structure for the new combined supply chain.



A sample of the issues considered during the modeling and analysis of a new combined and optimized supply chain include:

- Distribution footprint
 - Number of facilities—existing and potential
 - Total capacity of each facility
 - Lease terms and durations (operating and closing costs)
- Products
 - Current products offered, costs, volumes
 - Expected new mix after merger
- Customers
 - Location of customers
 - Product demand and volumes by customer location
 - Shared vs. unique
- Suppliers
 - Location of suppliers
 - Volumes by product and customer location
- Transportation
 - Current lane volumes, costs and contracts
 - Potential new lanes, volumes and costs
- Demand
 - Historical demand of products
 - New projected demand based on combined products and customers

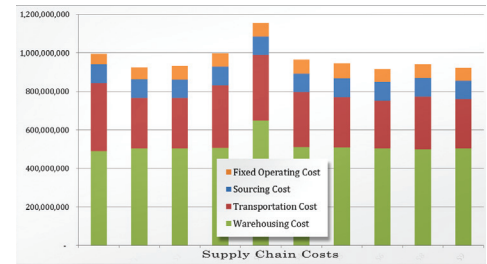
M&A Case Examples

Case Example: Pre-Merger Network Optimization

Challenge: A global manufacturing company was exploring a merger with a competitor which would combine two large supply chains. The company needed to identify operational redundancies and cost reductions and find strategic locations for new facilities to optimize service and minimize costs.

Solution: A baseline supply chain model was built incorporating both existing networks to validate costs. The model was optimized to combine networks and eliminate less efficient locations. “What if” scenarios were evaluated to consider changes in demand, fuel costs and capacity.

Results: The optimized network could create over \$24 million in savings, with no degradation of service levels and fewer total facilities. The model can also be used to identify optimal locations for additional facilities when capacity limits were reached.



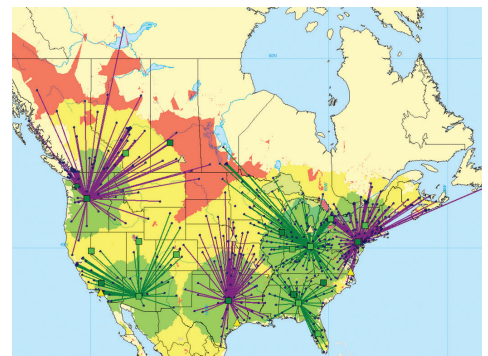
Comparison of supply chain costs across alternate network scenarios

Case Example: Making Data-Driven Site Selection Decisions

Challenge: One of North America’s largest packaged foods producers acquired a major frozen food manufacturer. With fuel costs on the rise, the company needed to re-evaluate their inbound and outbound distribution strategies given the expanded network. Specifically, which DCs should service which customers and what was the optimal quantity and location for DCs and what the fuel cost ‘tipping point’ would be where the optimal network would not be advantageous.

Solution: A network optimization model was used to establish and validate the baseline merged supply chain, determine the optimal network configuration and conduct sensitivity analysis.

Results: The analysis showed that savings could be achieved by simply realigning which customers were sourced by which DCs, eliminating redundant shipments coming from multiple sources and reducing expensive cross country shipments. Because of the high construction cost and costs associated with closing an existing distribution center, Memphis was not a good option to build a new distribution center. The most significant savings could be found by expanding the existing Southeast warehouse and moving the West distribution center east out of California.



Service-area mapping precisely displays service distance to various geographic regions using shaded areas bounded by actual street-level details

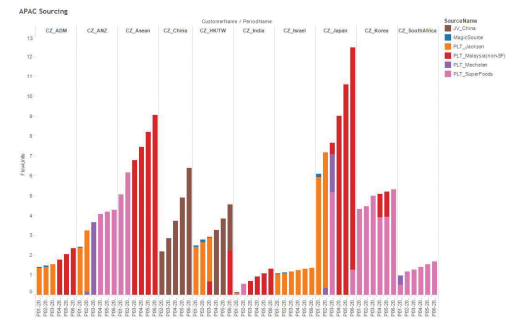
Case Example: Planning Adequate Production Capacity for Merged Supply Chains

Production modeling can be used in conjunction with network optimization to right-size production footprint and optimize production capacities across the merged supply chains. Models can incorporate all production-related data structures such as work centers, work resources, production processes, bills of material and related production rates, costs and yields, to balancing production capacities globally or within individual facilities. Production modeling is an ideal tool for higher-level production footprint/ facility decisions as well as creating “what ifs” for S&OP near-term realignments. Modeling results can also determine lot sizing, labor shift allocation, working hours or best utilization of changeovers. Depending on corporate goals, companies may choose to optimize for maximum utilization or maximum profit.

Challenge: A well-known global food and beverage producer had acquired a new line of snack foods. Given this addition, the company wanted to know how their current production and distribution network was positioned to meet the increased volume and when and where capacity problems could occur.

Solution: A multi-period network optimization model was built incorporating existing production locations and work centers and showing customer, capacity, product and demand data forecast for the next six years. Given inputs including raw material, sourcing and production costs, transportation costs, fixed operating costs and startup costs, when and where would it make sense to open new production lines to ensure all the demand for the product would be met while keeping total cost at a minimum?

Results: Many people at the company were surprised by the optimization results, which recommended a much earlier date for new facility openings than was generally believed to be optimal. However, by viewing detailed output graphics of the total landed costs, employees could see and understand that when end-to-end costs are considered, the optimal solution oftentimes is not the one that was predicted. The model showed a potential savings of \$7 million in labor and transport savings by opening facilities earlier than the company had originally planned.



The network optimization showed a potential savings of \$7 million in labor and transport savings

Case Example: Designing an Optimal Transportation Network for the Merged Organization

When merging supply chains there is also an opportunity to optimize transportation networks. Often lane and route consolidation can result in millions of dollars in reduction in annual transportation cost. Transportation network design can be done alone or in conjunction with network optimization, and enables companies to visualize their entire transportation network, identify optimal DC-to-customer assignments, determine the ideal mode mix and create optimal multi-stop delivery and/or pick-up routes and determine the best utilization of assets, evaluate driver work schedules and even perform service-based greenfield analysis.

Challenge: A medical imaging company needed to quickly create a post-merger distribution network.

Solution: Analysts created a model of the existing network based on historical costs and inventory from their SAP system in order to evaluate multiple network scenarios.

Results: The analysis recommended that the company use six pool points to shave \$1 million annually from its transportation budget while breaking down truckloads into LTL shipments to yield higher truck utilization. The company also used the model to analyze its truck routings and shipments—and found that it was wasting resources in many cases.



Minimize overall route cost by minimizing the time and distance trucks are driven empty

Start Here for a Successful M&A Strategy

Mergers and acquisitions introduce an incomparable number of options for the design of the new organization's future supply chain. Redundant facilities, assets, suppliers, customers and products set many M&A efforts up for failure. Using modeling technology to visualize, analyze and optimize the current and future supply chains can help significantly reduce the risk and provide a data-driven roadmap for success.

References

- (1) WilmerHale 2013 M&A Report
- (2) "The Big Idea: The New M&A Playbook." The Harvard Business Review Online 3/11

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K2Enterprise™

TransportationGuru™

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LLamasoft, Inc.
201 South Main Street, Suite 400
Ann Arbor, Michigan 48104, USA
Phone: +1 866.598.9831
LLamasoft.com
Info@LLamasoft.com

SAP® Certified
Integration with SAP Applications

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