

# Service Level Improvement through Supply Chain Optimization

## Vertical

Manufacturing	Pharmaceutical	Healthcare	Portfolio	Logistics	Financial	Government	Business
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## Genre

Case Study	Project Review:	White Paper	Technology Overview
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## Client

A Leading Appliance Manufacturer

## Situation

A \$900 million division of the company was not meeting customer delivery level requirements even though inventory levels were high, product was available, and manufacturing capacity was not an issue. The new management team believed that if this division could become more responsive to customer requirements, without increasing inventory, there would be major financial benefits as well as increased customer satisfaction.

The management team felt that the root cause and potential resolution lay in the current supply chain strategy. In an effort to improve service levels, a new supply chain network strategy was designed. Due to the complexity and impact of the changes under consideration, and to understand the true workings of such a network, it became necessary to study it in great detail prior to implementation. Management concluded the only adequate tool was business simulation.

## Objectives

The management objectives for undertaking this project were to:

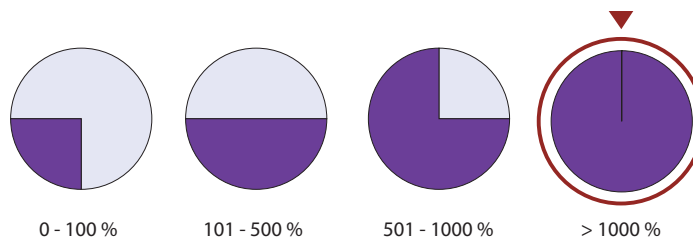
- Improve service levels by implementing a new supply chain network strategy
- Maintain or decrease current inventory levels and carrying costs
- Increase revenue from this division

## Results

Analyses from the simulation solution showed that higher service levels at lower total costs could be achieved by closing the factory warehouses and shipping directly to regional distribution centers. Conservative estimated results are as follows:

- Improved service level
- Lower projected lost sales due to product unavailability
- Direct savings \$12,000,000 annually, and 12% reduction in inventory carrying costs due to closing three factory warehouse locations
- Gained capability to evaluate potential future changes to the supply chain including costing, delivery timing, truck fleet sizing and supply chain maximum performance against hypothetical factory output
- ROI >1000%

## ROI Range



## Solution

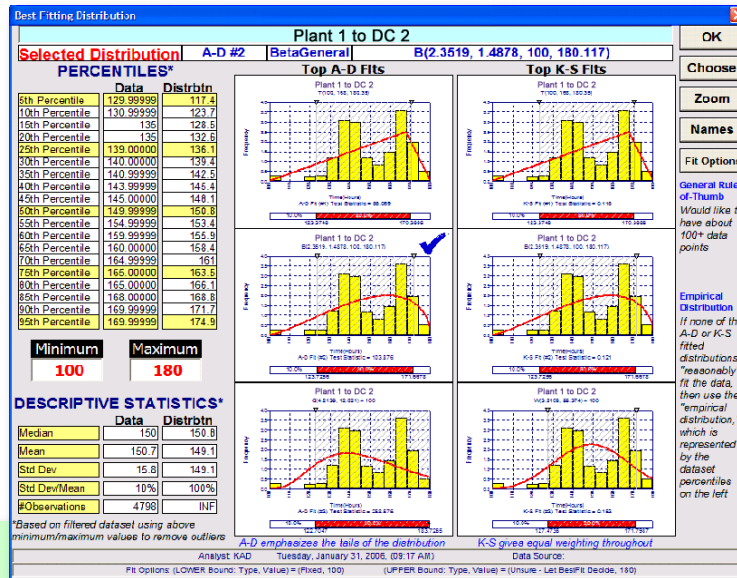
A simulation solution was implemented that accurately represented the supply chain including the following major aspects of the process: production, warehousing, shipping, and demand.

The supply chain model gave management the ability to experiment with different strategies for handling high velocity and low velocity SKU's as well as the threshold that divides the two. Other inputs were growth, inventory levels at DC's, trailer volumes, dock rules, and production rules.

Solution

Examples of Solution Input Data:

Travel time to/from locations including statistical variability



Plant capacities by factory

Factory (Plant)	In	C =	O =	R =	W =	P =	Slide-in Range	Slide-in Range	Commercial Washer	Warming Drawer	CM = Combo Microwave	Factory No.
Metropolis	1000	0	0	3000	5000	0	0	0	200	100	0	1
Atlantis	0	0	1000	0	0	0	500	0	0	0	0	2
Mudville	0	250	0	0	0	1000	0	600	0	0	450	3
<b>Total</b>	<b>1000</b>	<b>250</b>	<b>1000</b>	<b>3000</b>	<b>5000</b>	<b>1000</b>	<b>500</b>	<b>600</b>	<b>200</b>	<b>100</b>	<b>450</b>	<b>13100</b>
Minimum Run Qty	20	40	100	100	200	50	10	10	1	5	10	

Examples of Solution Decision Analysis Output Reports, Charts and Scorecards

