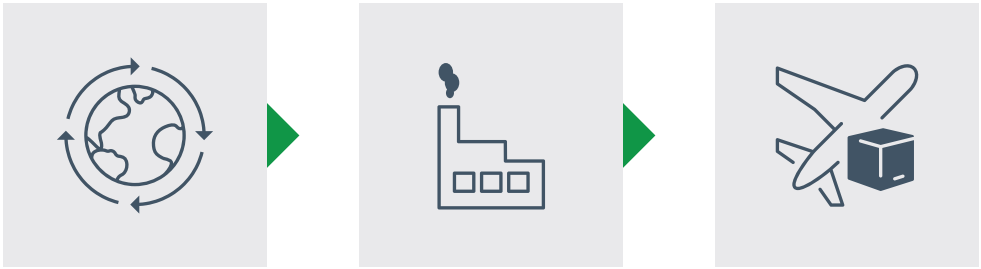
CASESTUDY

LLamasoft®

Identifying Contingency Plans for Supply Chain Risks to Ensure On-Time Deliveries

Challenge

A large pharmaceutical company produces a drug that is an antibody to prevent respiratory complications in infants. This product has a global customer base, three different manufacturing and filling facilities, and three global distributions centers. The largest challenge with this product is how to identify and quantify the risk elements in the supply chain in order to build a resilient network that eliminates drug shortages.



Global customer base

Three different manufacturing and filling facilities

Three global distribution centers

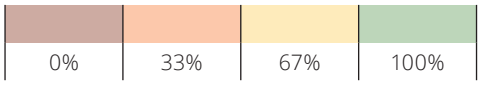
Solution

In order to avoid drug shortages the pharmaceutical company used LLamasoft's sophisticated supply chain design software to build an end-to-end model of the drug's supply chain network across all three manufacturing facilities. They then used the software to simulate inherently known and unknown risk factors to identify the processes and nodes in the supply chain with the most risk, and recommend changes or modifications in the network.

Through LLamasoft scenario simulation and analysis, a major pharmaceutical manufacturer was able to develop a production plan that could withstand the effects of known and unknown risk, ensuring near 100 percent on-time delivery of potentially life-saving products worldwide.

The project team tested several risk mitigation strategies for known risk elements and found only slight improvements were possible to ensure successful customer delivery. However, they discovered that the largest impacts on delivery timing were around unknown risk factors such as unexpected lot failures at any node from natural disasters or any non- normal event. The company used LLamasoft to run forward-looking sensitivity and risk modeling scenarios to create contingency plans, enabling fast response to unplanned supply chain disruptions and ensure there are no drug shortages.

		2015			2016			2017		
		Current State	Option 1	Option 2	Current State	Option 1	Option 2	Current State	Option 1	Option 2
US	Product 1	100%	100%	100%	100%	100%	100%	50.1%	50.3%	71.4%
	Product 2	100%	100%	100%	100%	100%	100%	100%	100%	100%
EU	Product 1	100%	100%	100%	91.7%	91.7%	100%	100%	100%	100%
	Product 2	97.5%	99%	100%	73.8%	74.7%	100%	71.4%	71.4%	100%
JPN	Product 1	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Product 2	98.5%	99%	100%	97%	99.5%	100%	0%	0%	50%



Results

The company can now reschedule their production plan to largely reduce known risk.

Through LLamasoft scenario simulation and analysis, they were able to identify and analyze potential delivery issues and develop a production plan that could withstand the effects of known and unknown risk, ensuring nearly 100 percent on-time delivery of products worldwide. The company was also able to quantify the impact of risk on each process area in each echelon of the supply chain as shown in the graph above.

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