



Start Considering Risk in Your Supply Chain Design with these 4 Steps

What's Going On with the Supply Chain?

It's a question being asked across the country, from Fortune 500 boardrooms to kitchen tables.

Some call it a perfect storm, the series of events that ripped apart what had been a mostly reliable supply chain. Within a few weeks of the start of the COVID-19 lockdown in the spring of 2020, massive cracks in the global supply chain had opened. Billions of dollars' worth of consumer goods, electronics, food products and more sat unclaimed on transatlantic barges as organizations shut their doors and sent the dockworkers and shipping crews home.

Meanwhile, the same story played out across air and land transportation services. It wasn't long before the global supply chain as we knew it had nearly ground to a halt. Throw in global events like the war in Ukraine and new lockdowns impacting China and uncertainty in the supply chain has become a norm.

As we've emerged from the worst of it, we've learned some crucial lessons about how to design supply chains. **Resilient supply chain design requires three critical considerations: cost, service levels, and RISK.**



Too Many Organizations Fail to Truly Identify Risk within their Supply Chains

If your company falls into that category, you're hardly alone. Sixty percent of companies in a recent PwC survey¹ pay only marginal attention to risk reduction processes.

Sadly, companies working with less resilient supply chain designs have borne the brunt of the collateral damage from the supply chain collapse:

89%

of companies experienced a supplier risk event in the past five years²

>60%

of companies said that their performance indicators had dropped by 3% or more as a result of supply chain disruptions¹

~69%

of businesses fear they'll lose 10% of their revenues due to supply chain disruptions³

The good news is that by incorporating risk analysis and modeling into the supply chain design process, you can move beyond a sole focus on the cost-effectiveness of getting your products from point A to point B.

Widening your lens to consider potential risks to your network allows decision-making that addresses both financial and resiliency business objectives.

Optilogic gives you the visibility and quantification of risk you need, not only to survive uncertainty, but to thrive.



¹ <https://www.pwc.com/gx/en/operations-consulting-services/pdf/pwc-supply-chain-and-risk-management.pdf>

² <https://www.gartner.com/en/supply-chain/insights/supply-chain-risk-management>

³ Resilience and sustainability in the cost-plus world: A research programme from Economist Impact 2022

Risk Has Been Missing in Supply Chain Design—Until Now

Risk management in supply chain has become a buzzy marketing concept because of the recent turmoil in the industry—suddenly, the market is flooded with vendors talking about assessing and mitigating risk in supply chains. Until now, however, the focus has been on supply chain planning and execution, not on supply chain design.

Why is that? Common sense tells us that considering risk early should have a positive impact on eventual outcomes. Mostly, it's been a question of lagging technology. **Legacy supply chain design tech hasn't provided a way to easily identify and quantify risks during the design process.** So, risk hasn't been a part of decision-making because we simply didn't have a way to thoughtfully examine it.

Instead, companies have compared different potential network designs and business policies based primarily on cost (and sometimes service). Risk, though, has not been a part of the conversation at the design phase.

A reactive approach to risk is not enough to counter the realities of today's global supply chains.

At Optilogic, we believe supply chain design must include risk. Our Cosmic Frog supply chain design platform enables that by providing comprehensive, contextual risk ratings for every scenario.

By considering risk in supply chain design, you're empowered to make better decisions where modeled scenarios can be considered alongside finances, service levels, and risk. This proactive approach to risk assessment and mitigation is far more beneficial than a reactive approach (waiting to assess risk in the planning and execution phase).

Optilogic's risk engine breaks down risk into golden nuggets of data-driven analysis. Rather than limiting risk to a single focus on suppliers, the platform applies risk across the board — because every decision in the supply chain design process carries risk.

Considering Risk in Supply Chain Management



Supply Chain Design

Identifying and understanding different risks in any given decision

Network structure, inventory policies, transportation policies, sourcing decisions, etc.

Proactive approach to risk management



Supply Chain Planning and Execution

Monitoring and identifying current disruptions and risk

Adjust current plans and operations to avoid or mitigate the impact of the risk in the current network design and structure

Reactive approach to risk management

What Is Risk in Supply Chain Design?

When we're discussing supply chain design, the concept of risk has a specific connotation. The Optilogic risk rating engine includes risks impacting decision-making in the supply chain design process; in other words, a focus on risks that might lead you to change your network design. That's not to say other risks don't exist or that they don't matter—taking a proactive approach while making supply chain design decisions will organically help to mitigate or alleviate risks related to execution.

Optilogic considers risk in the big picture and breaks it all the way down to the granular level to help guide supply chain decision-making. The engine assesses risk and potential impacts according to analytic data collected by sources like the World Bank and the World Health Organization (WHO).

Here are two examples of the way the risk engine evaluates specific categories of risk in supply chain design:

Geographic risk

Geography can have a significant impact on risk. For example, the physical location of a supplier or facility can add risk related to the potential for natural disaster impacts from events like floods, droughts, extreme temperatures, or earthquakes. The distance from a customer, supplier, or facility to a nuclear power plant is another key consideration the risk engine analyzes.

The engine also considers geographic risk in the context of qualities like economic resiliency, political stability, and risk related to the strength of the local labor market. Optilogic helps determine whether alternate, less geographically risky locations could provide the same or similar financial outcomes and service levels.

Network design risks

Optilogic also assesses risks related to the network design or the policies governing the supply chain. Factors like the number of sources servicing a customer or facility or the percentage of storage capacity used can significantly impact risk and should be considered in decision-making. When these risks are higher, it could be beneficial to modify sourcing policies or reconsider product flows.

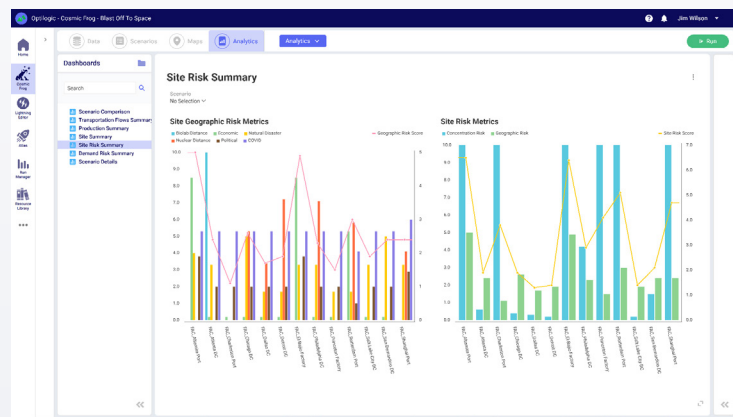
Four Steps to Consider Risk in Supply Chain

Identifying risky aspects of your network, understanding the impact of potential disruptions, and using the design process to mitigate and reduce risk is an essential part of creating a resilient supply chain. With Optilogic, you have everything you need to do it.

1 Get Your Opti-Risk Score

Each time you launch a Cosmic Frog optimization or simulation model, the risk rating engine works its magic in the background, calculating an Opti-Risk Score for each scenario. There's no need for input or manual processing on the part of Optilogic users—the risk engine engages automatically.

Run as many scenarios as you'd like to reach smarter decisions by evaluating the impact of each scenario on financial impacts, service levels, and risk.



Breaking down the Opti-Risk score

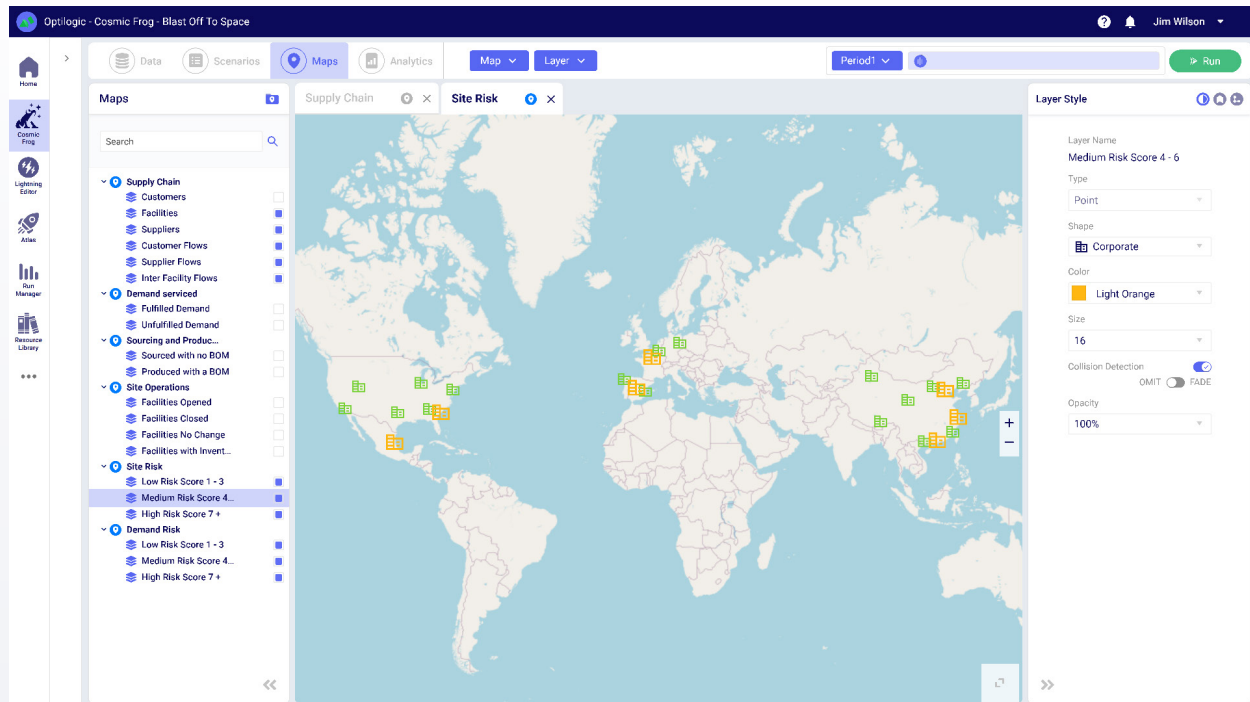
The Opti-Risk Score is calculated from the following aggregated risk scores:

- Network Risk Score
- Customer Risk Score
- Supplier Risk Score
- Facility Risk Score

Big picture network risks are evaluated, and each customer, supplier, and facility within a network is given a risk score.

The **Network Risk Score** includes:

- Product Stocking Point Count Risk
- Product Supply Make Count Risk
- Transport Time Risk
- Time To Import Risk
- Time To Export Risk



The **Customer Risk Score** includes:

- Concentration Risk
- Geographic Risk
- Source Count Risk

The **Supplier Risk Score** includes:

- Concentration Risk
- Geographic Risk

The **Facility Risk Score** includes:

- Concentration Risk
- Geographic Risk
- Capacity Risk (Storage, Throughput, Work Center)

Each customer, supplier, and facility risk can be investigated further—every customer, every supplier, and every facility is assigned its own risk score. This level of detail gives users incredible insight into the exact spots within the supply chain that are more prone to risk. Once identified, you can get to work modeling scenarios to overcome those specific areas of risk by creating mitigation and contingency plans.

2 Identify and Answer the “What Ifs”

The Optilogic risk engine is a game changer when it comes to supply chain design. It’s a key element and the best first step toward a truly holistic, 360-degree approach to supply chain resiliency. Understanding the impacts of the potential risks and disruptions surfaced by the risk engine enables better, smarter supply design decisions.

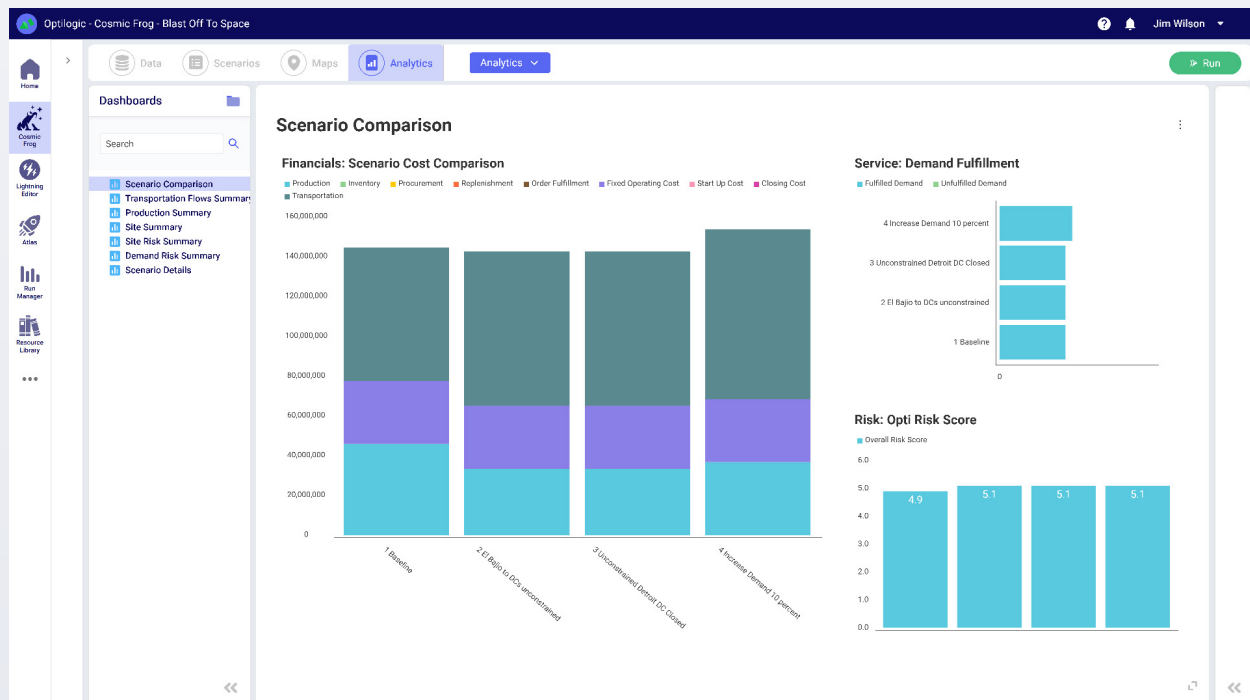
After identifying a risk score, you can move on to scenario analysis.

Cosmic Frog’s simulation and optimization engines give you the bottom line—how much would a given risk cost and how would it affect our customer service levels? You can answer the big “what if” questions:

- What if this high-risk facility went offline because of a natural disaster? For three days? For six months?
- What if we lost this supplier indefinitely?
- What if demand increases and we run out of capacity at the DC which the risk engine highlighted as having high capacity risk?

“What happens if this node goes down? What happens if this gets delayed? What if... We can set that framework now — with Optilogic we have the ability to look at scenarios at a granular level.”

- Eric Sobanski, Senior Vice President, PECO Operations



3 Become a Mitigation Expert

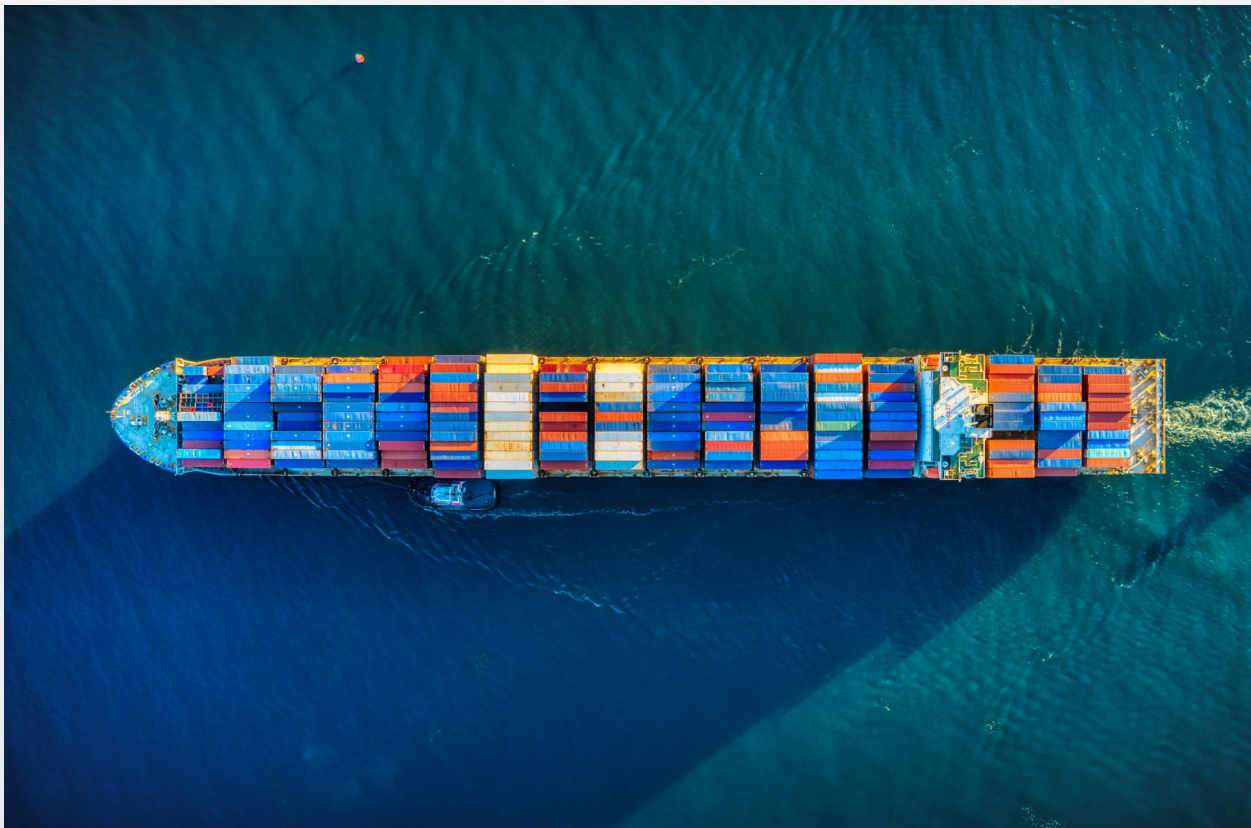
Risk mitigation considerations at a granular level are powerful. Not only can you ponder all the wide-ranging possibilities for redesigning your supply chain, but you can pinpoint ways to mitigate risks related to those changes.

Mitigation scenarios could include options like closing specific warehouses located in risky geographic areas and consolidating others— the Cosmic Frog platform can walk you through a variety of options.

4 Plan for Contingencies

Sometimes, even when your team has prioritized data-informed decision-making from the start, bad things happen. Maybe it's a winter storm even meteorologists didn't predict or a delivery driver strike impacting a significant geographic region. This is where resilient supply chain design comes into play.

A risk-informed supply chain design means rock solid contingency planning, complete with risk analysis that makes it easy to select the best way to work around temporary problems without missing a beat.



Is Your Supply Chain Designed for Resiliency?

If you aren't considering cost, service, and risk in the supply chain design phase, the answer is no. It's as simple as that. Modern supply chains need to be tougher than ever to withstand the global and local risk inherent in today's political, environmental, and economic climate.

The good news is that when you partner with Optilogic, you can make smart, data-informed, proactive decisions right out of the gate that inject resiliency at every point in the supply chain design phase.

Ready to get started? [Create your free Cosmic Frog account](#) as your first step to steer away from risk and toward supply chain resiliency.

Meet Cosmic Frog

Supply Chain Network Design that Balances Cost, Service, and Risk

3-in-1 Design Platform

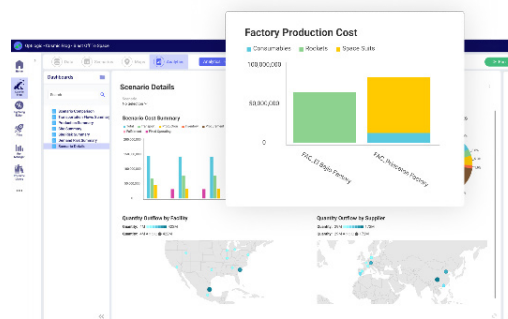
Combine optimization, simulation, and risk to select the best designs

100% Cloud-Native

Design and share models from anywhere and run hundreds of models concurrently

Risk Rating

Get a risk assessment on every scenario for resilient supply chain designs



Sign Up for Free