

**Get Started With
Supply Chain Design
in 5 Easy Steps**



Today's Presenters

Chris leads Velis' supply chain consulting practice. Chris has 13 years of logistics and supply chain experience, focusing on network optimization, load planning, cost analysis, and mode conversion. He's managed multiple hubs for industry leader J. B. Hunt Transport, overseeing all regional 3PL operations.

Chris Foraker, MBA
Director of Supply Chain Consulting



At Optilogic, John is responsible for building strategic partnerships with the consulting community and works with global organizations to develop sustainable supply chain design solutions. John has expertise in inventory optimization, demand planning, network optimization, S&OP, and finite capacity scheduling.

John Ames
SVP Business Development



Hannah develops and delivers solution demonstrations and projects for current and future Optilogic customers. Previously she held multiple supply chain planning roles at Georgia Pacific, including production planning and warehousing/transportation optimization.

Hannah Neiman
Sr Solution Design Engineer



Optilogic and the Cosmic Frog Platform

Applied Research
Professional Services
Customer Success
Supply Chain Design Leadership

Velis

Supply Chain Engineers
Analytics, Data Science, Technical
Modeling & Optimization,
Business Strategy
Cosmic Frog & Solution Expertise

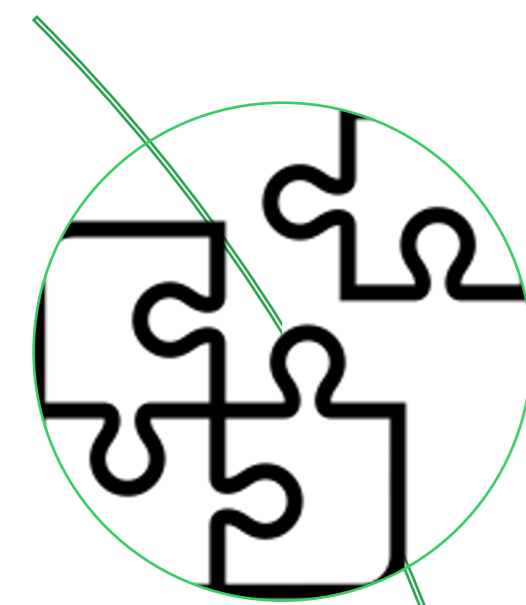
Customers

Internal Design Team
Business Strategy
Data and KPI Metrics

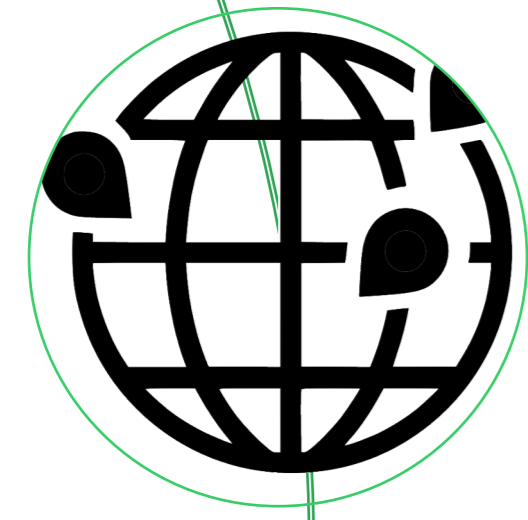


Agenda

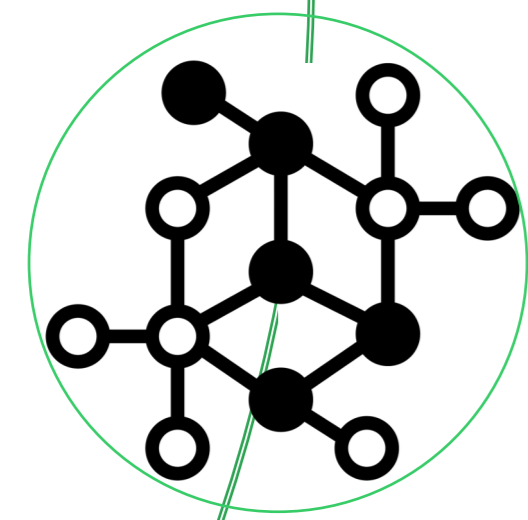
What you will learn today:



What is supply chain design and what are the required elements?



Which business problems or scenarios should I model?



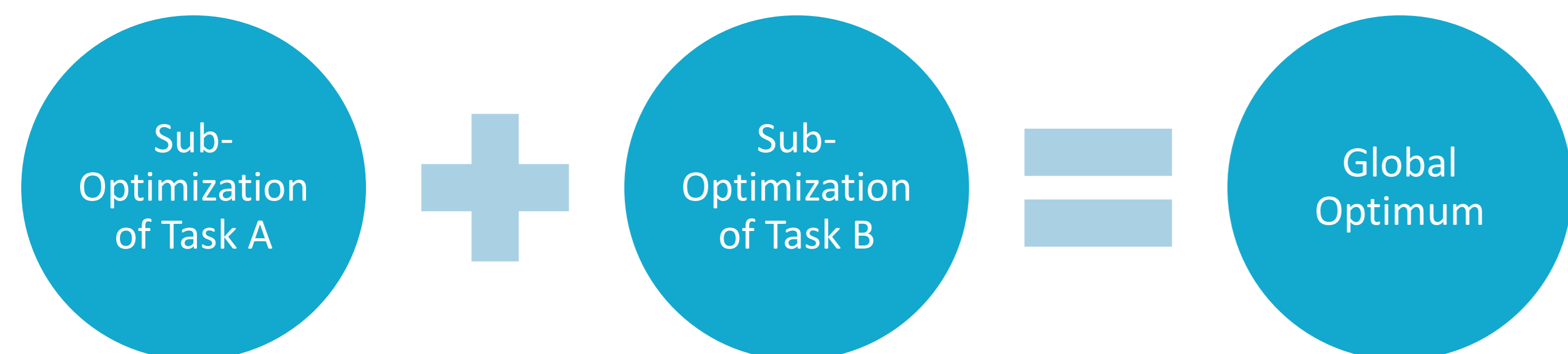
Five simple steps to build your first model



LIVE DEMO – How to build a greenfield analysis model

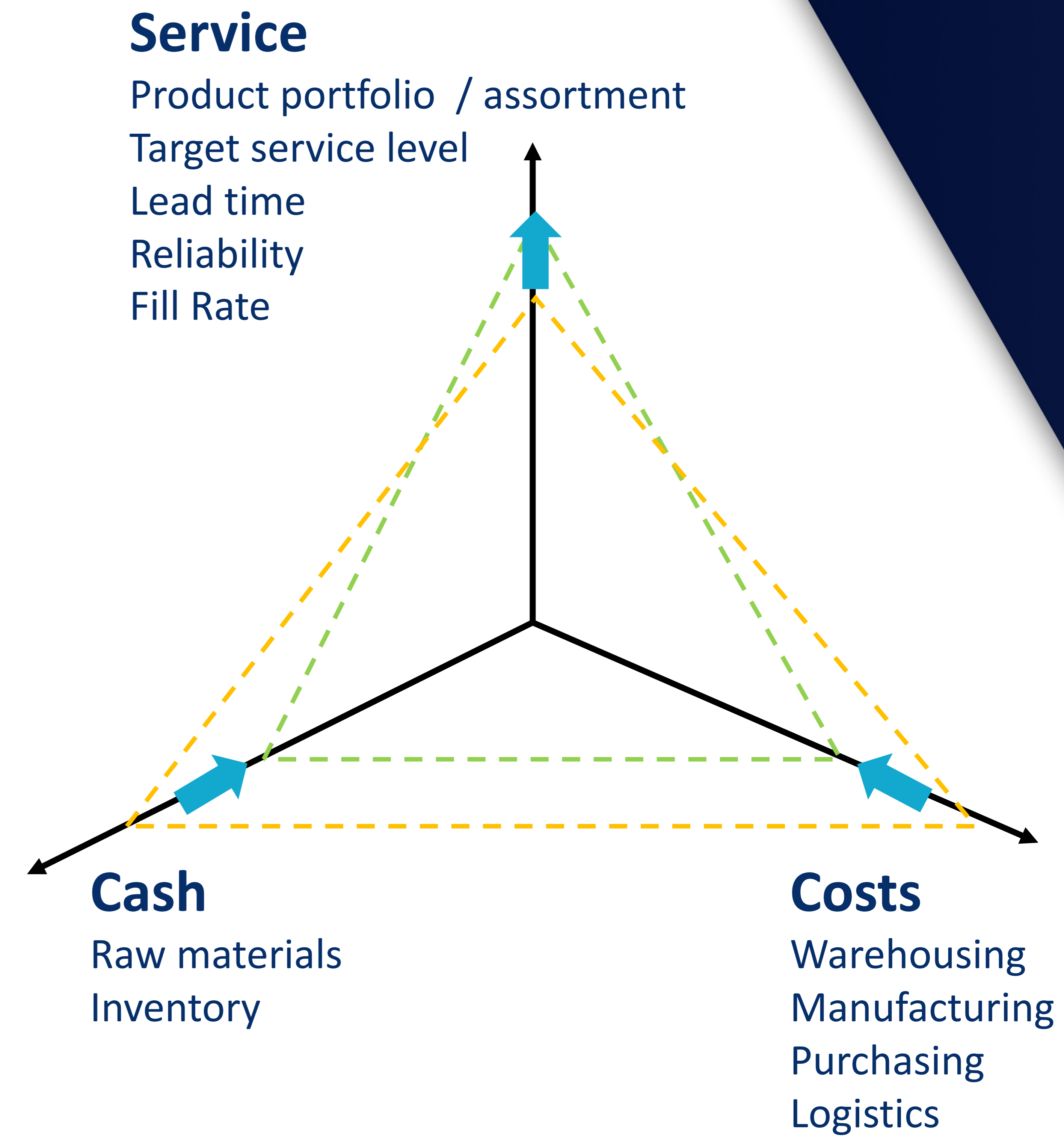
What Is Supply Chain Design?

Today's Supply Chains Were Designed to Fail

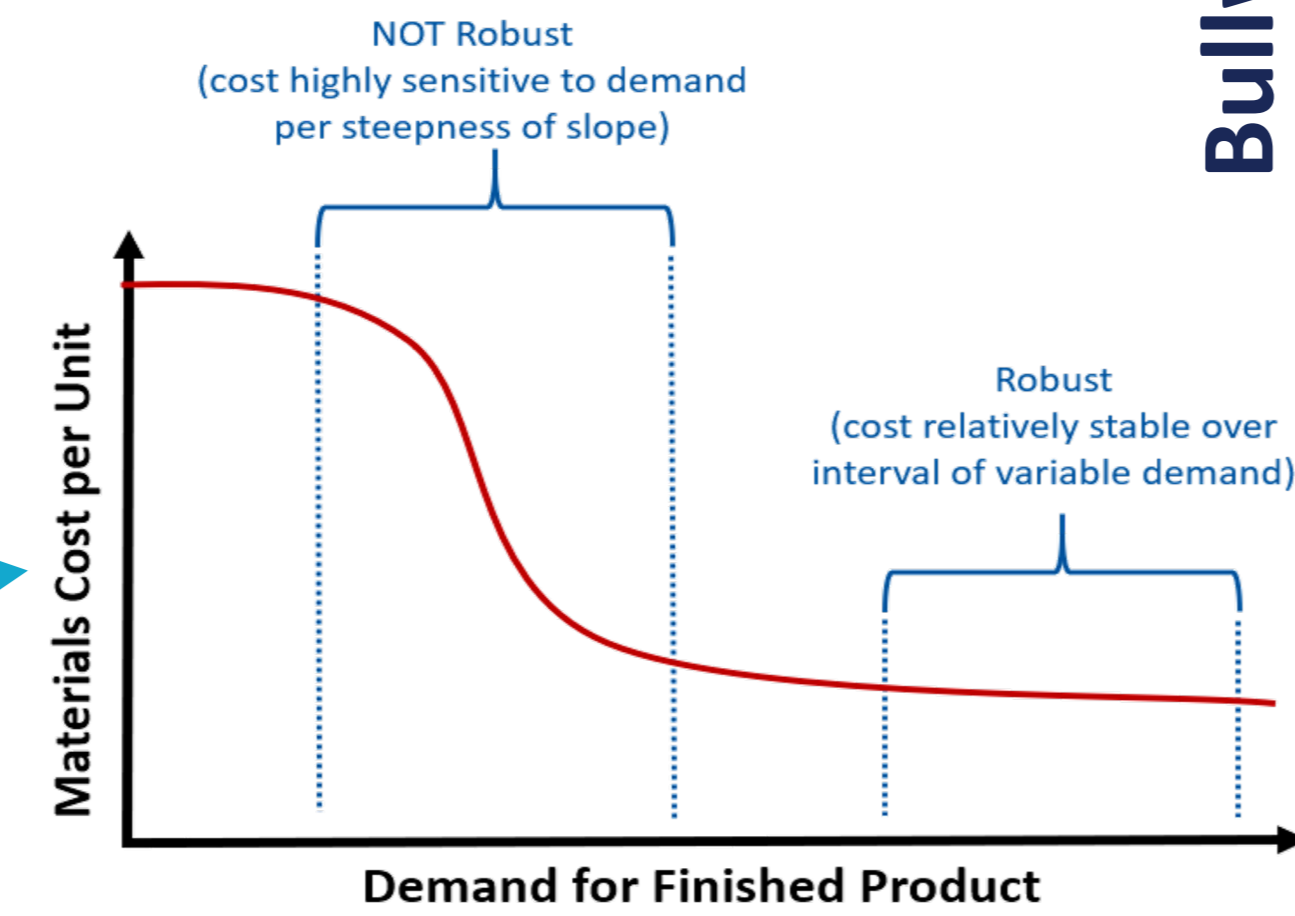
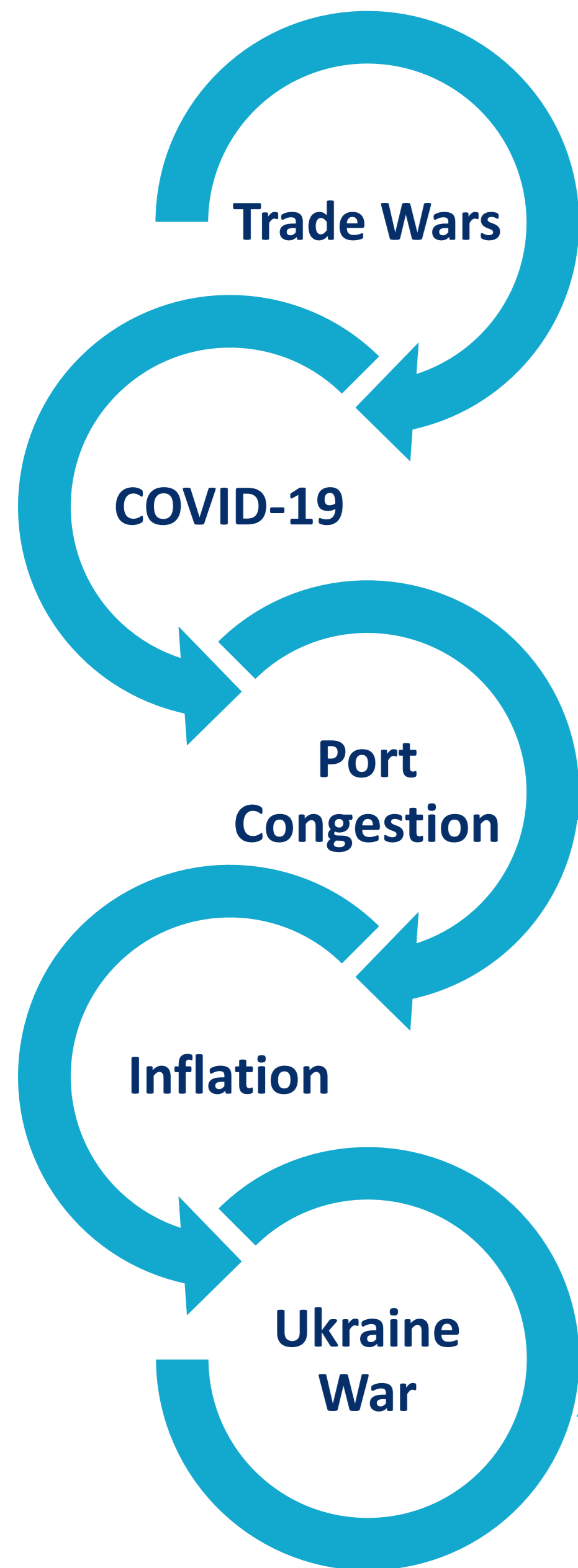


Supply chains no longer live in a siloed state where focus was on optimizing processes within a team, department, or process.

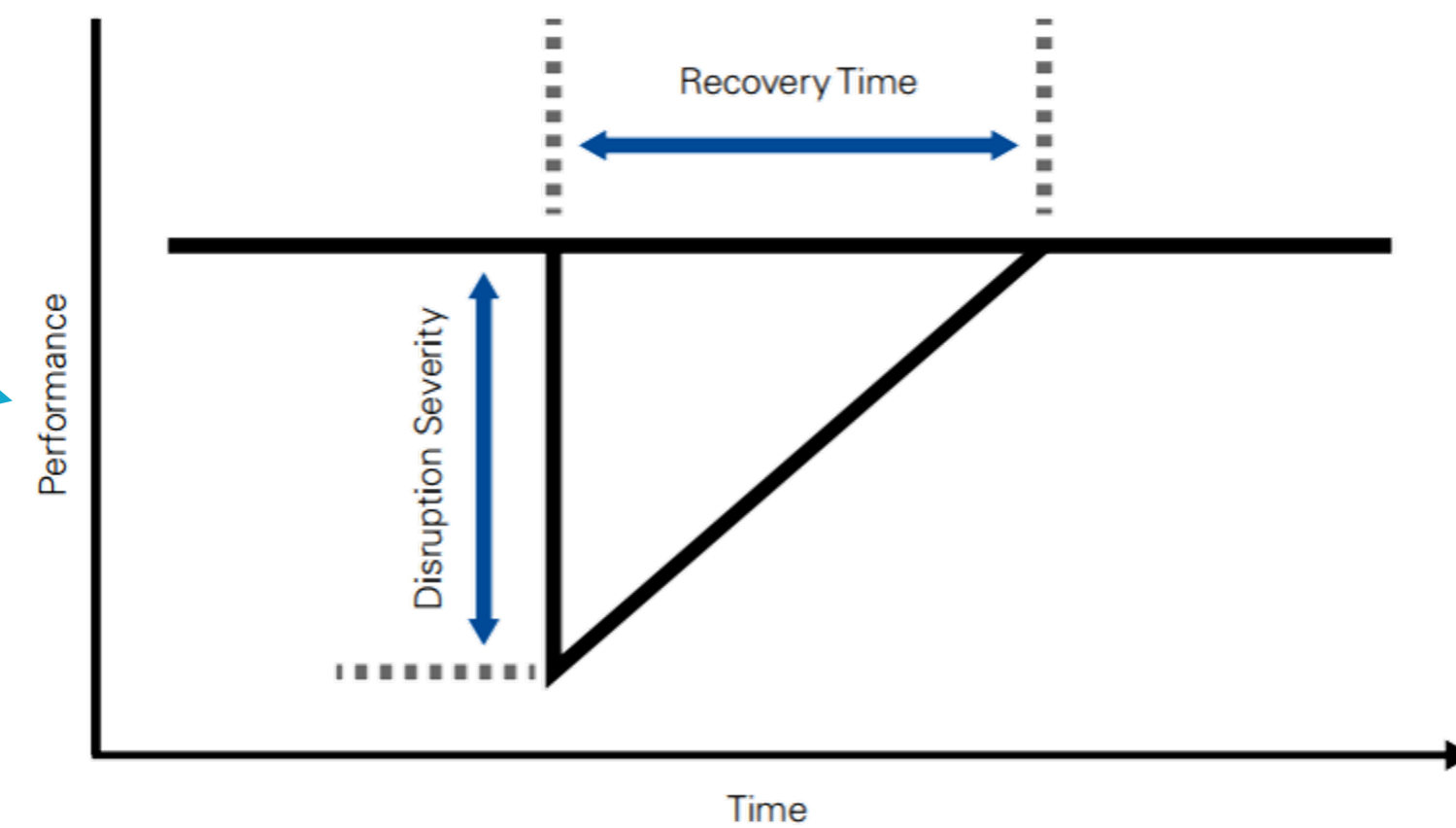
Today's supply chain optimization aims to consider all aspects of the supply chain triangle (service, cost, and cash) simultaneously to reach a global optimum.



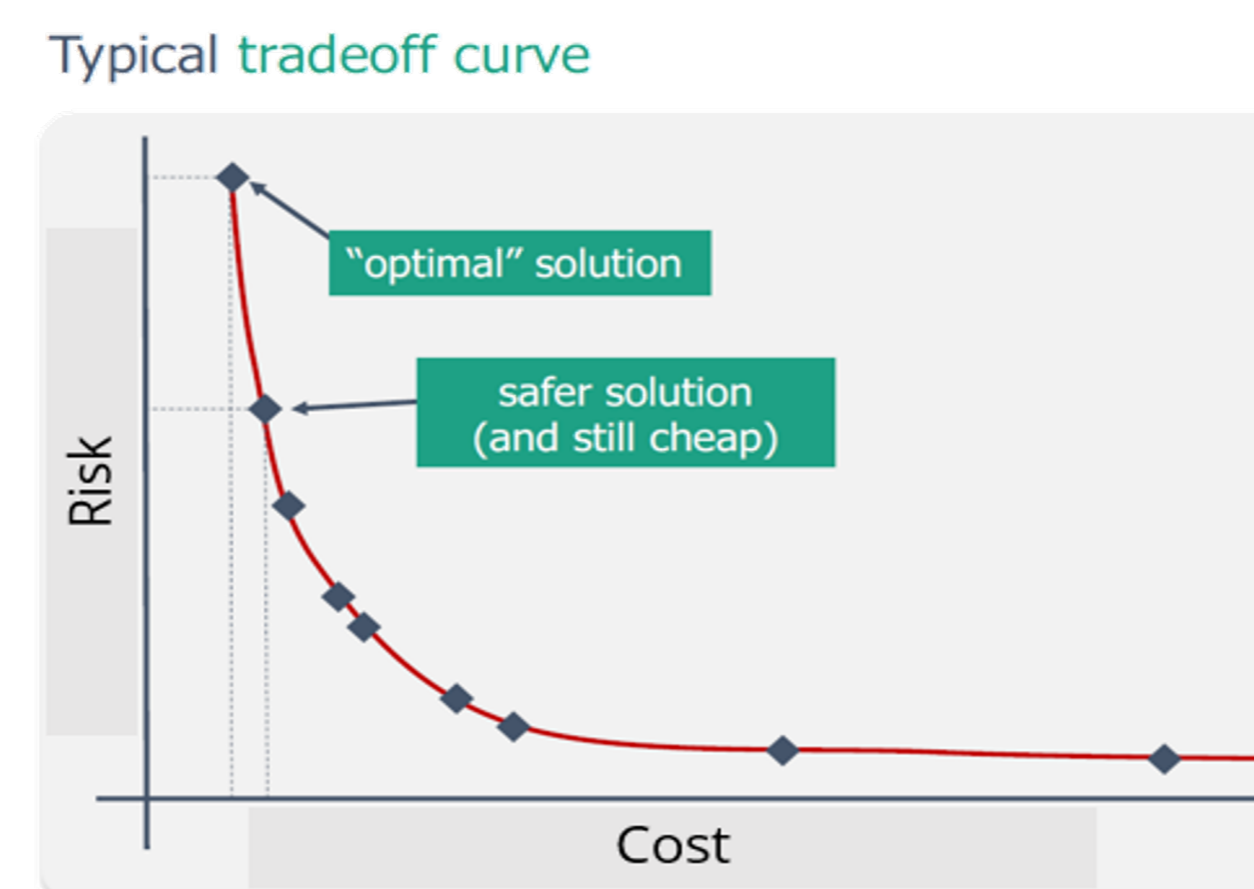
The New State of Supply Chain



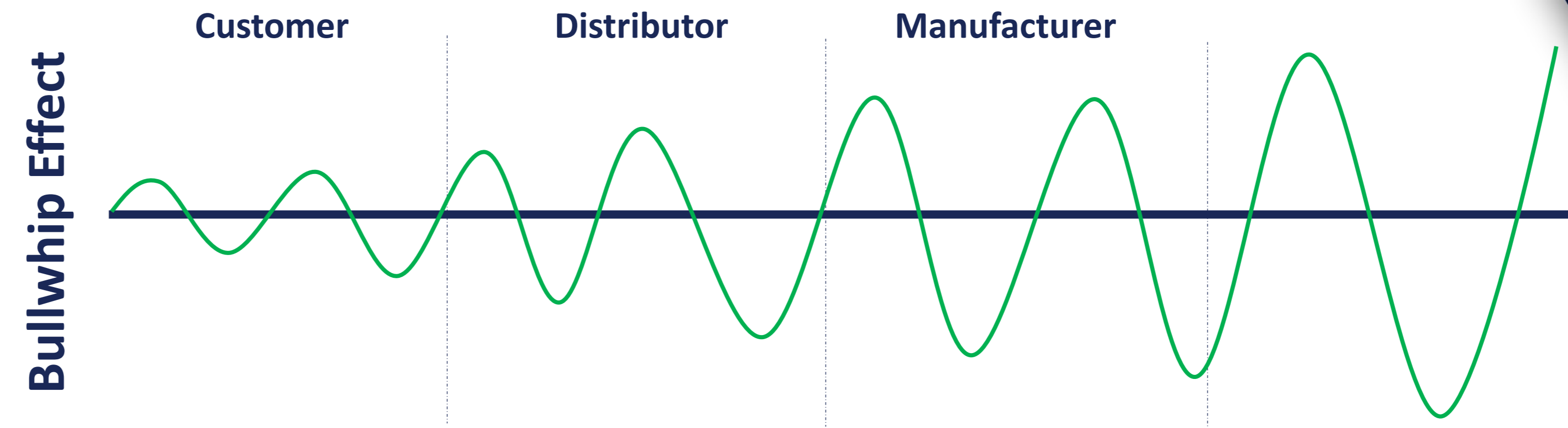
Robust systems



Resiliency



Risk Appetite



Bullwhip Effect

“75% of companies felt negative impacts on their business due to supply chain disruption” – Accenture

“Covid-19 resulted in shortages and stock-outs for 28% of retailers.” - RetailNext

“Ukraine supplies approximately 50% of the world’s neon gas. Since neon gas is used to produce semiconductor chips, both governments and businesses are seeing prices increase.” – Harvard Business Review

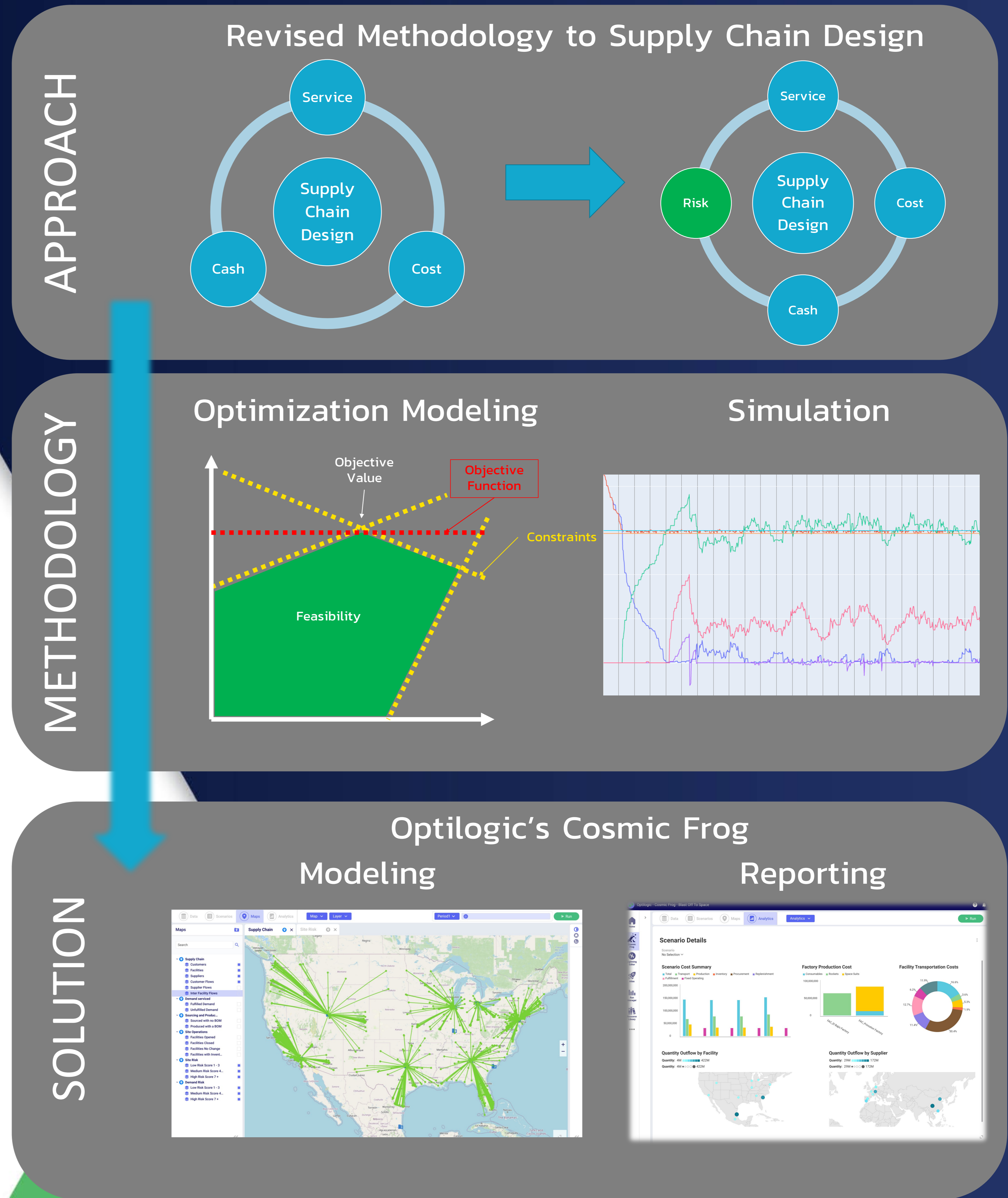
“Trucking costs increased by 36% year over year in 2021 due to bottlenecked materials, ports, and pandemic customer demand.” - Supply Chain Brain

A New Approach Is Needed in Supply Chain Design

"95% of supply chain executives report having a formal supply-chain risk-management process following Covid-19." (McKinsey)

"89% of companies have experienced a supply chain risk event in the past five years, yet plans to mitigate risk lack maturity." (Gartner)

Businesses need to shift their approach to consider cost, service, and risk in supply chain design.



What Is Supply Chain Design?

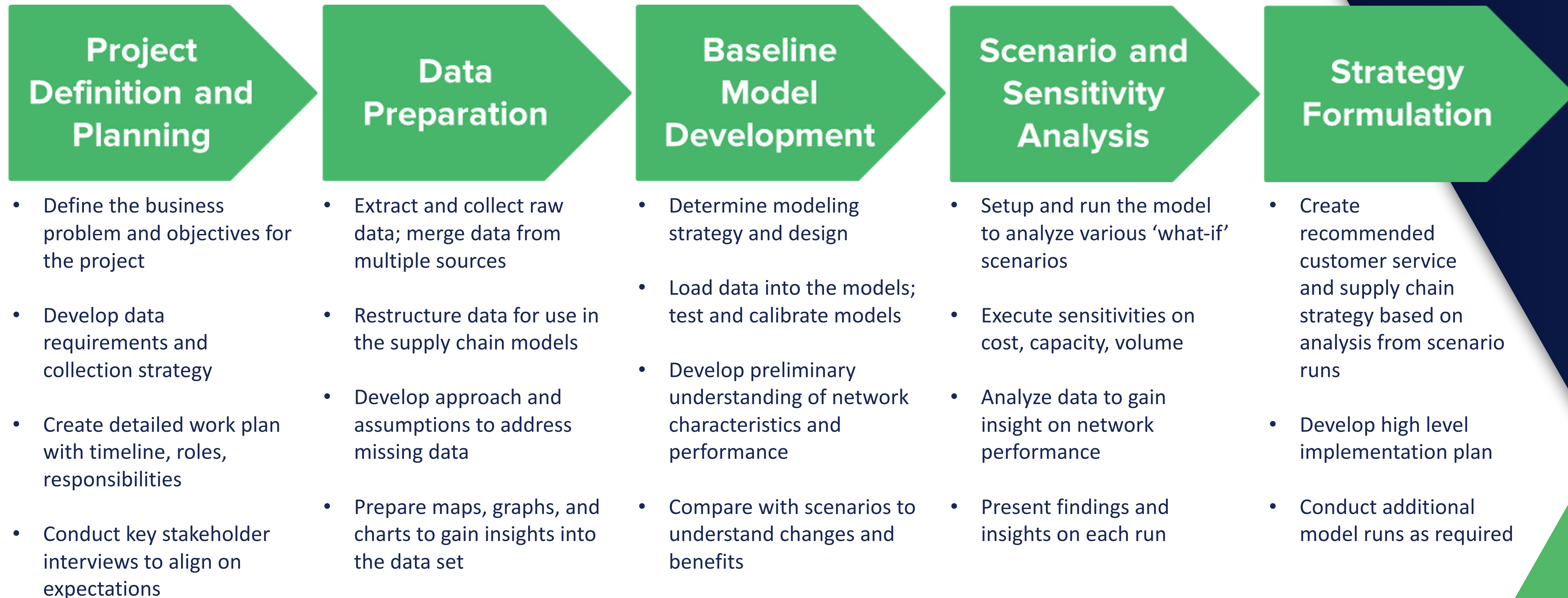
“The goal is to hit the sweet spot of maximum value optimization, where foolish risk is balanced against excessive caution.” – Steven J. Bowen

Determining optimal locations for facilities (distribution centers, warehouses, and plants), and balancing the “flow” between them to optimize an objective.

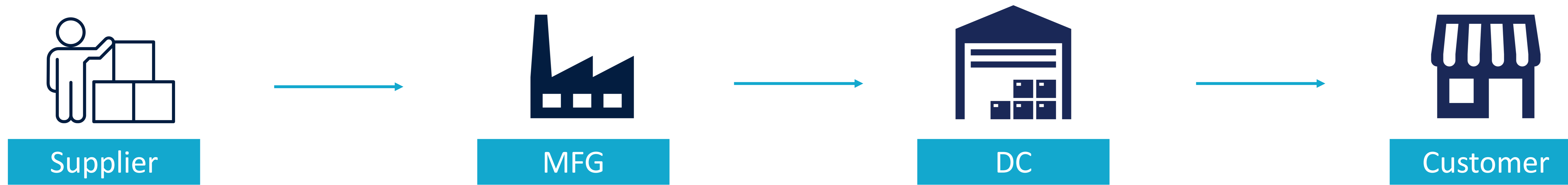
Enables the ability to test the hypothetical performance of “what-if” scenarios



Supply Chain Design Process



Core Data Elements in a Supply Chain Design Model



Model Elements

- Customers
- Facilities – MFG/DC
- Suppliers (if applicable)
- Products
- Customer Demand
- Time Periods

Policies

- Customer Fulfillment Policies
- Replenishment Policies
- Procurement Policies (if including suppliers)
- Transportation Policies
- Production Policies
- Inventory Policies

How Do You Determine Which Business Problems to Model?

Before You Start Designing... Define Your “Good” Supply Chain

In terms of:

Service

Cost

Risk

Margin

Before You Start Designing... Define Your “Good” Supply Chain

Which elements of the supply chain can be changed?

Which should be looked at first, second, or third in a project?

**Supply
(Inbound)**

Production

Transport

**Distribution
(Outbound)**

Product Mix

Five Steps to Build Your First Supply Chain Design Model

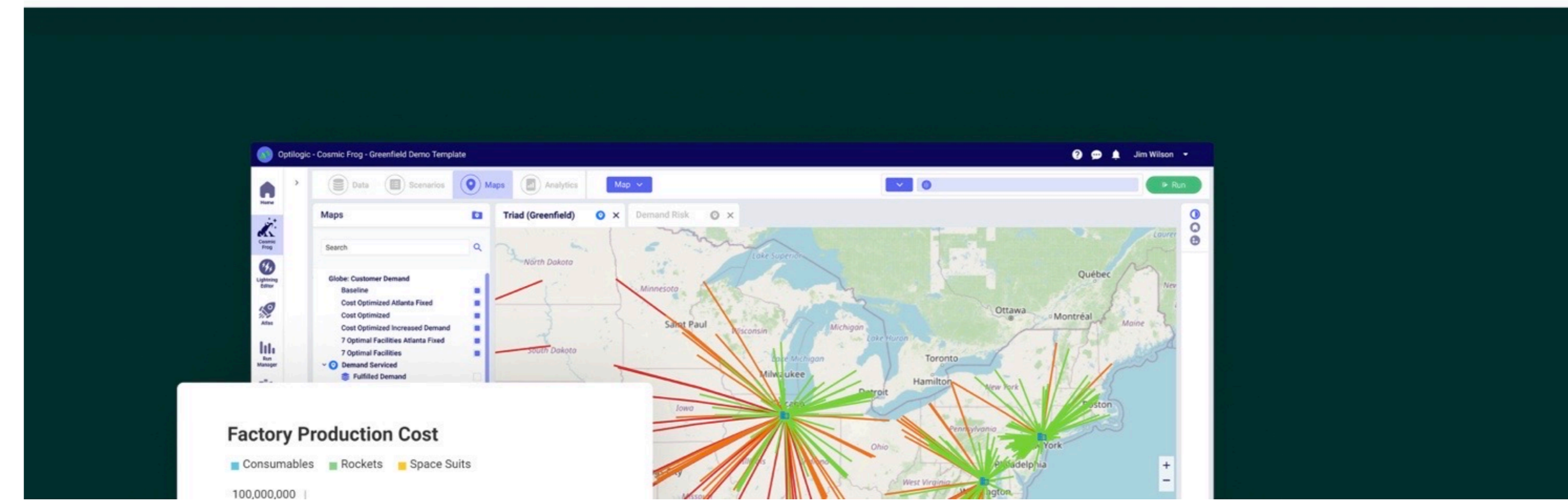


Step 1:
Create Your
Free
Cosmic Frog
Account

Create Your Free Account

Cosmic Frog gives you everything you need to build supply chain models in the cloud.

Watch our Overview Video
Click play to learn more!



1 — 2 — 3

Create an Account

FIRST NAME*

LAST NAME*

EMAIL*

PHONE NUMBER*

Next Step

Step 2:
Create a New
Model or
Select from a
Template

The screenshot shows the 'Optilogic - Resource Library' interface. At the top, there is a search bar with a 'Copy' button, a search input field, and a 'Sort By A-Z' dropdown. The results show 9 items. The interface is divided into a left sidebar with navigation icons (Home, Cosmic Frog, Lightning Editor, Atlas, Run Manager, Resource Library) and a main content area. The main area displays a grid of resource cards. Each card features a blue header with a frog icon, a title, a timestamp, a brief description, and a set of tags. The visible cards are:

- Blast Off To Space** (2 days ago): Global network strategy that includes inbound raw material sourcing and outbound finished goods distribution. Tags: MIP, Risk, Cosmic Frog, Network Strategy, Sour.
- China Exit Strategy** (2 days ago): Global network strategy that includes inbound raw material sourcing and outbound finished goods distribution. This model... Tags: MIP, Risk, Cosmic Frog, Network Strategy, Risk.
- China Exit Strategy In Asia** (9 days ago): Japan network strategy that includes inbound raw material sourcing and outbound finished goods distribution. This model focuses on... Tags: MIP, Cosmic Frog, Risk, Network Strategy, Risk.
- Connecting to Google Sheets** (2 days ago): Learn how to easily import data from Google Sheets to a Cosmic Frog model.
- Connecting to Snowflake** (2 days ago): Learn how to easily import data from Snowflake to a Cosmic Frog model.
- Detailed Facility Selection** (2 days ago): Use this model for facility selection, where detailed cost and capacities are important.

Step 3:
Upload Data
(or Use Our
Test Data!)

Optilogic - Cosmic Frog - Greenfield Demo Template

Home Cosmic Frog Lightning Editor Atlas Run Manager Resource Library Analytics Designer Cloud Storage SCG Converter

Data Scenarios Maps Analytics File Grid Geocode Run

Tables Customers CustomerDemand

CustomerName	Status	Address	City	Region	PostalCode	Country	Latitude	Longitude	SingleSou
<input type="checkbox"/> CZ1166	Include		Treose	Pennsylva...		USA	40.1509	-74.9820	FALSE
<input type="checkbox"/> CZ1167	Include		Oaklyn	New Jersey		USA	39.9023	-75.0813	FALSE
<input type="checkbox"/> CZ1168	Include		Mahan...	Pennsylva...		USA	40.8126	-76.1382	FALSE
<input type="checkbox"/> CZ1169	Include		North ...	California		USA	34.1030	-118.0238	FALSE
<input type="checkbox"/> CZ1170	Include		Highla...	Florida		USA	26.4088	-80.0661	FALSE
<input type="checkbox"/> CZ1171	Include		Lake Park	North Car...		USA	35.0848	-80.6348	FALSE
<input type="checkbox"/> CZ1173	Include		Metzger	Oregon		USA	45.4492	-122.7623	FALSE
<input type="checkbox"/> CZ1174	Include		Warmi...	Pennsylva...		USA	40.1884	-75.0841	FALSE
<input type="checkbox"/> CZ1176	Include		Bystrom	California		USA	37.6199	-120.9827	FALSE
<input type="checkbox"/> CZ1177	Include		San Ca...	Florida		USA	26.5651	-80.0611	FALSE
<input type="checkbox"/> CZ1178	Include		Bryn M...	Pennsylva...		USA	40.0227	-75.3156	FALSE
<input type="checkbox"/> CZ1179	Include		Mercha...	New Jersey		USA	39.9502	-75.0504	FALSE

Model Elements: Customers (1333), Facilities (1), Demand: CustomerDemand (3999), Constraints: GreenfieldServiceBar (3), Element Details: UnitsOfMeasure (39), Functional Tables: ModelSettings (1), Output Summary Tables: OptimizationNetwork (1), OptimizationCustr (1333), OptimizationFacilityS (1), OptimizationGreenfie (5), OptimizationGreen (5), OptimizationGreen (5)

**Step 4:
Build
Baseline
and Run
Scenarios**

Optilogic - Cosmic Frog - Blast Off To Space

Home | Data | Scenarios | Maps | Analytics | Scenario

Scenarios

Search

Unassigned Items

- 1 Baseline
- 2 El Bajío to DCs unconstrained
 - Remove Flow Constraints
- 3 Unconstrained Detroit DC Closed
 - Close Detroit DC
 - Remove Flow Constraints
- 4 Increase Demand 10 percent
 - Increment all demand
 - Close Detroit DC
 - Remove Flow Constraints

Run Manager

Resource Library

Run

Assign Scenarios

Close Detroit DC

- 1 Baseline
- 2 El Bajío to DCs unconstrained
- 3 Unconstrained Detroit DC Closed
- 4 Increase Demand 10 percent

Run

Run Dialog:

Resource Size: 4XL CPU: 10 Core Ram: 256Gb Run Rate:11

Engine: Neo (checked), Throg (unchecked)

Neo Parameters: Lane Creation Rule (TP), Solve Time Limit, MIP Relative Gap Percentage (0.0001), Feasibility Tolerance (0.000001), Allow Cross Period Flows, Open Close At Most Once, Write Input Solver Files, Write LP File

Throg Parameters

Select Scenario:

- 1 Baseline
- 2 El Bajío to DCs unconstrained
- 3 Unconstrained Detroit DC Closed
- 4 Increase Demand 10 percent

Cancel | Start

**Step 5:
Analyze
and Share
Scenarios**

Optilogic - Cosmic Frog - Blast Off To Space

Home Cosmic Frog Lightning Editor Atlas Run Manager Resource Library

Data Scenarios Maps Analytics Map Layer

Period1 Run

Maps Supply Chain Site Risk

Search

- Supply Chain
 - Customers
 - Facilities
 - Suppliers
 - Customer Flows
 - Supplier Flows
 - Inter Facility Flows
- Demand serviced
 - Fulfilled Demand
 - Unfulfilled Demand
- Sourcing and Produc...
 - Sourced with no BOM
 - Produced with a BOM
- Site Operations
 - Facilities Opened
 - Facilities Closed
 - Facilities No Change
 - Facilities with Invent...
- Site Risk
 - Low Risk Score 1 - 3
 - Medium Risk Score 4...**
 - High Risk Score 7 +
- Demand Risk
 - Low Risk Score 1 - 3
 - Medium Risk Score 4...
 - High Risk Score 7 +

Layer Style

Layer Name: Medium Risk Score 4 - 6

Type: Point

Shape: Corporate

Color: Light Orange

Size: 16

Collision Detection: OMIT FADE

Opacity: 100%

Demo: Intelligent Greenfield Analysis



Thank You for Attending!

Next Steps:

1. Check your email for the session recording and your 'Guide to Considering Risk in Supply Chain Design'
2. Create your free Cosmic Frog account at www.Optilogic.com
3. Reach out to Chris or John to learn more about how to get started

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