ORS GROUP
APPLIED A.I.

ORS AI Presentation

Applied AI for Distributors

Empowering Human Decisions Through
Advanced Analytics & Insights

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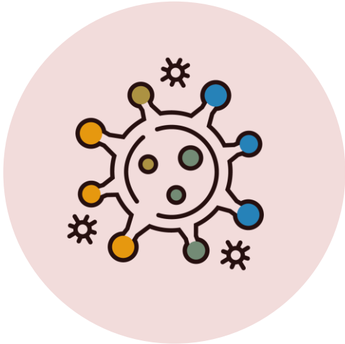
Opening Thoughts

- Globalization has led to increased uncertainty, complexity, and risk in supply chains.
- Strategies focused on cost management and delivery improvements are insufficient.
- The financial impact of supply chain disruptions can be devastating but is often not understood until it is too late.
  - Moderate or higher risk events can lead to a 7%-10% reduction in shareholder value.
  - 30% of companies facing major risk events go out of business within 24 months, and 25% within three years.
- Traditional deterministic models and tools, such as forecasting and S&OP processes, fail to account for uncertainty.
- Risk has a downside (negative impact) and an upside (opportunity management).

What Are the Major Supply Chain Risks That You Can’t Prevent?

While there are numerous other risks in the supply chain, the ones listed are particularly challenging because they often lack preventive controls, requiring distributors to respond with swift and strategic decisions to mitigate their impact.

Disruptions from External Events: Natural disasters, pandemics, and geopolitical conflicts can lead to severe disruptions in supply chains.

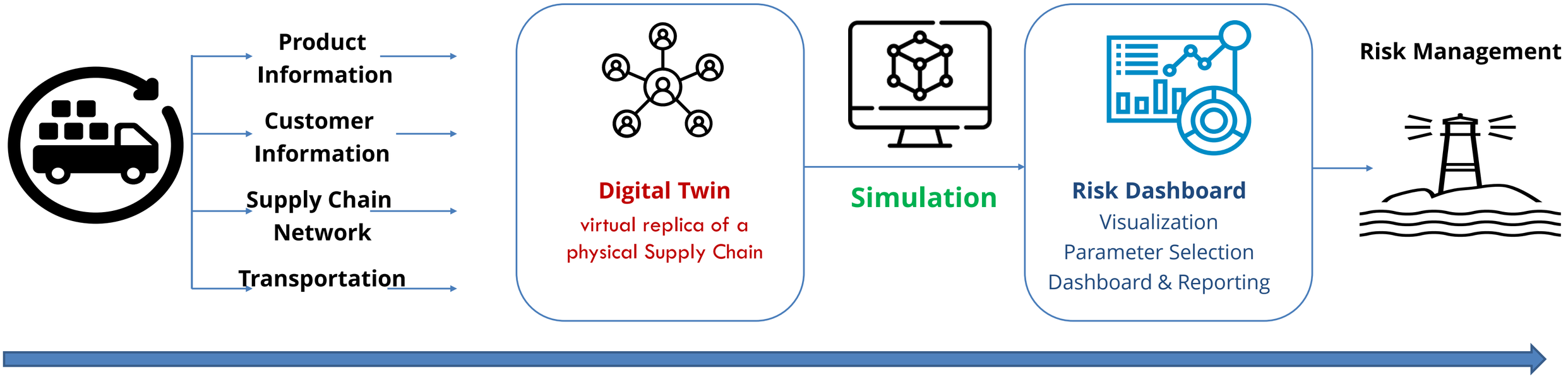


Logistic Dependence: Heavy reliance on transportation networks to receive goods from suppliers and deliver to customers, creating vulnerability to disruptions caused by weather, strikes, or logistical failures.

Demand Variability Changes in demand patterns can be sudden and unpredictable, regardless of the accuracy of the forecast

Using Digital Twin & Simulation to Mitigate Supply Chain Risks

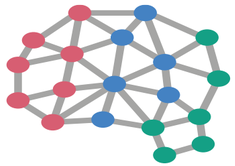
A digital twin is a virtual replica of a physical Supply Chain; which can run simulations to understand Supply Chain Risks. They can be used to identify, analyze, monitor, and mitigate the risks based on distributors' historical and forecasted data based on a range of variables from the actual supply chain.



Difference between ERP & Digital Twin

ERP

ERP Systems are designed to automate and manage core business processes, such as finance, HR, and supply chain operations, by integrating data across the organization.



Digital Twin

Digital Twins are primarily used for simulation and analysis, offering scenario-based & parameter-adjustable insights that are not inherently part of ERP or forecasting solutions.

Introducing ORS Lighthouse

“WHAT IF” SCENARIO ANALYSIS AND SIMULATION TOOL

DIGITAL TWIN

A comprehensive model (Digital Twin) of your whole company's operations, with millions of decisions and constraints modelled at a granular level on your real supply chain data

COMPREHENSIVE FACTORS ANALYSIS

Various demand, supply, inventory, fulfillment, facilities, locations, routes and policy decisions are modeled in simulated environment to predict and analyze impacts of decisions

RISK MANAGEMENT

Volatility, Uncertainty Ambiguity & Complexity in today’s markets is at all time high. SCHC gives the executives the possibility to perform a Real-time review of supply-chain risks and disruptions

HOW CAN IT HELP

“what if” scenarios Simulation to understand the business impact of any decision.

Test policies like MOQ, Replenishment and initial-push to see if they will resist demand disruptions

Understand various flow-paths and choke points in the supply chain

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Lighthouse Use Case

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Combining Digital Twin With Simulation

1. Digital Twin - Create a **digital representation of the customer's operations**:

    1. Apply Machine Learning algorithms to predict future demand in a long-time horizon
    2. Calculate raw material requirements, applying the BOM to the future demand
    3. Suggest the optimal raw material inventory

2. Simulation - Use the **Digital Twin to simulate the impact** of various factors on the performance of the customer's network. We simulated the impact of:

    1. Supplier Lead Time Variation
    2. Demand Variation
    3. Service Levels

Key AI-Driven Insights

Within 3 months*, we created a digital representation of their operations (Digital Twin) which delivered:

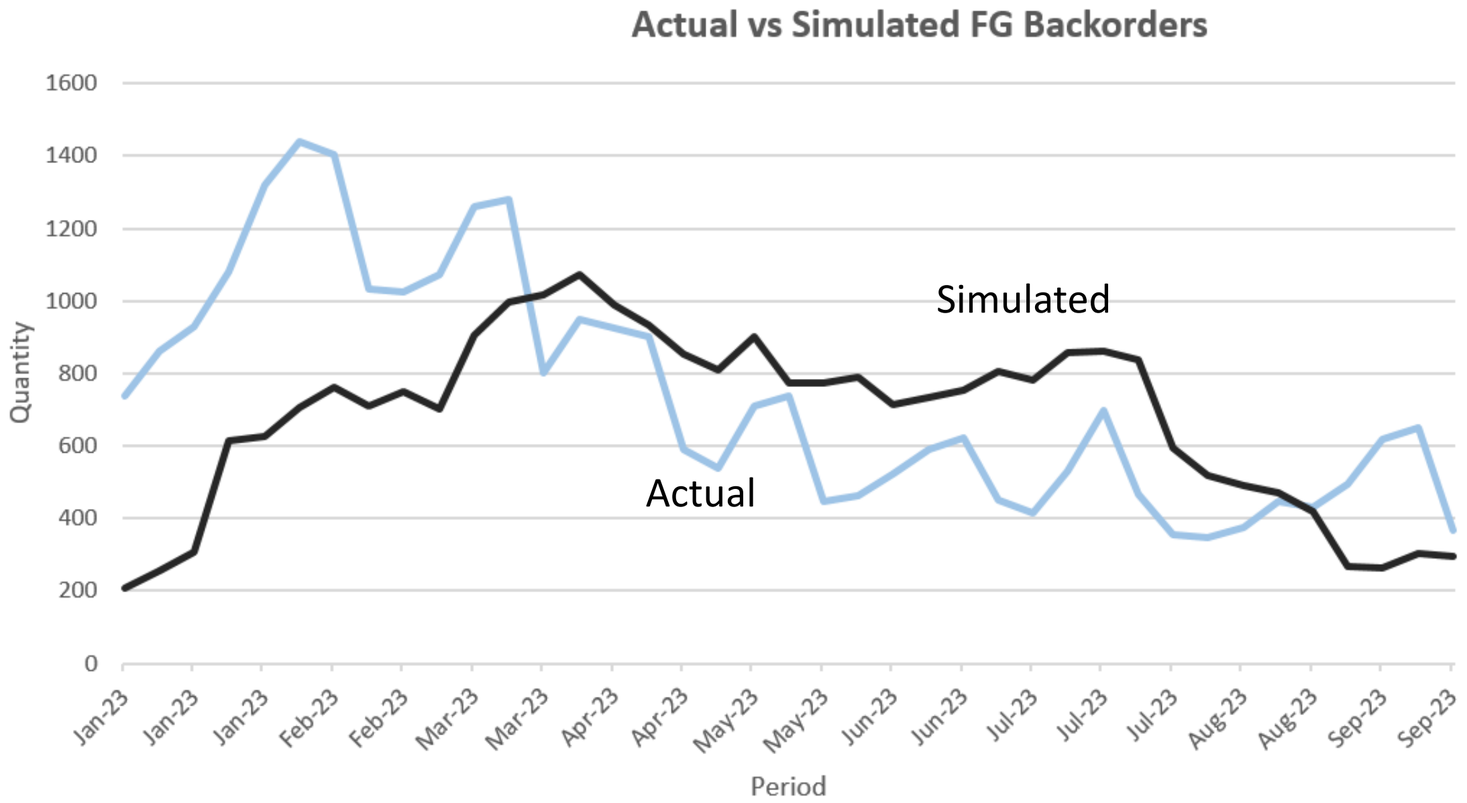
- Reduced back orders by **13.6%**
- Reduced PCB inventory by **19.6%**

The Digital Twin enables an **advanced simulation capability** that supports strategic **DECISION INTELLIGENCE** and impacts of various factors - both **EXTERNAL AND INTERNAL**.

This approach helps optimize different aspects of the process:

- Supplier relationship strategy and management
- Supply chain disruptions
- Customer satisfaction
- Demand spikes due to internal and external factors

Performance of the Digital Twin - Backorders

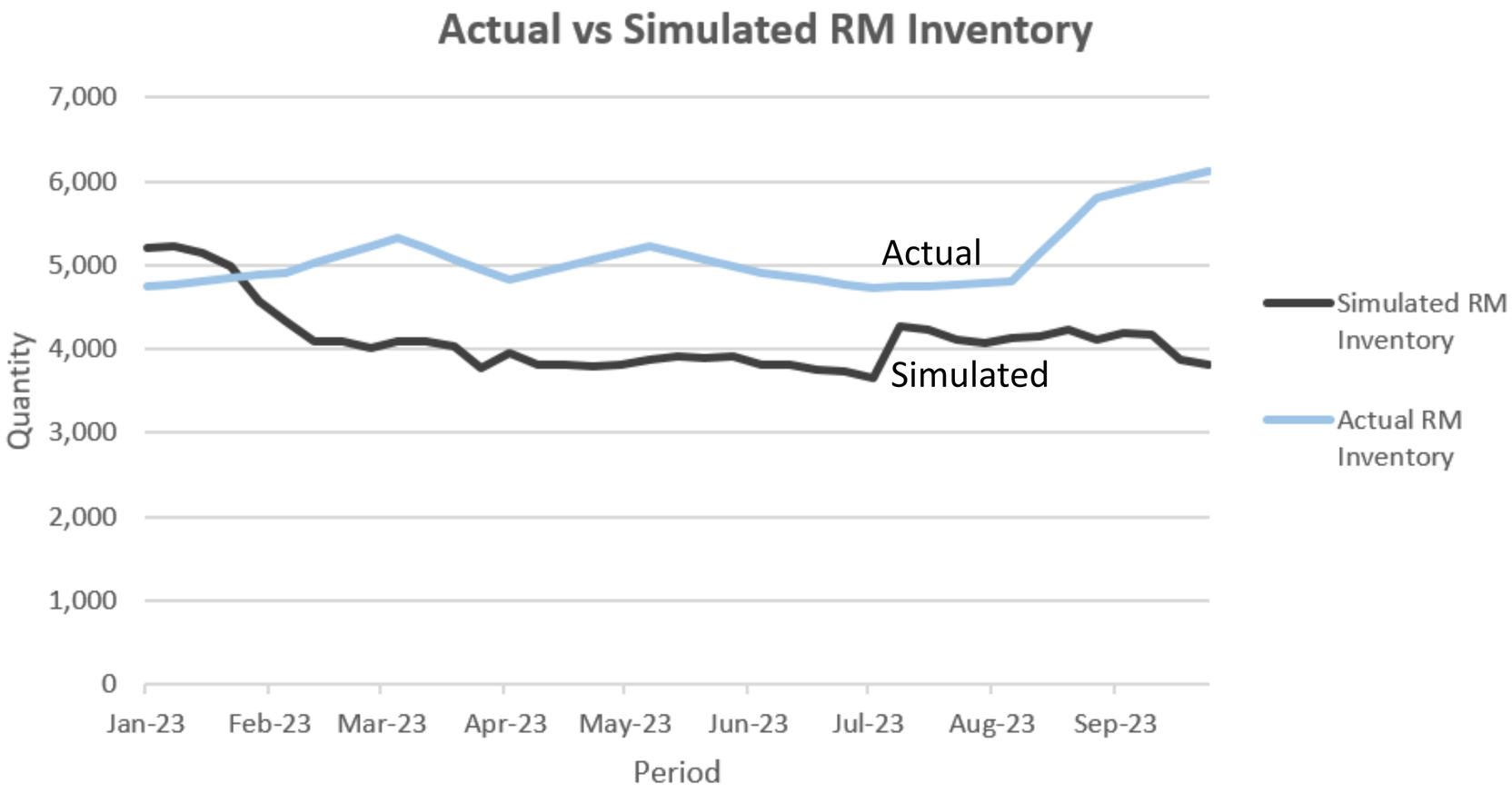


Backorder Reduced by 13.6%

Avg. Actual: 772
Avg. Simulated:667

Demand: actual
Supplier LT: actual

Performance of the Digital Twin - Inventory

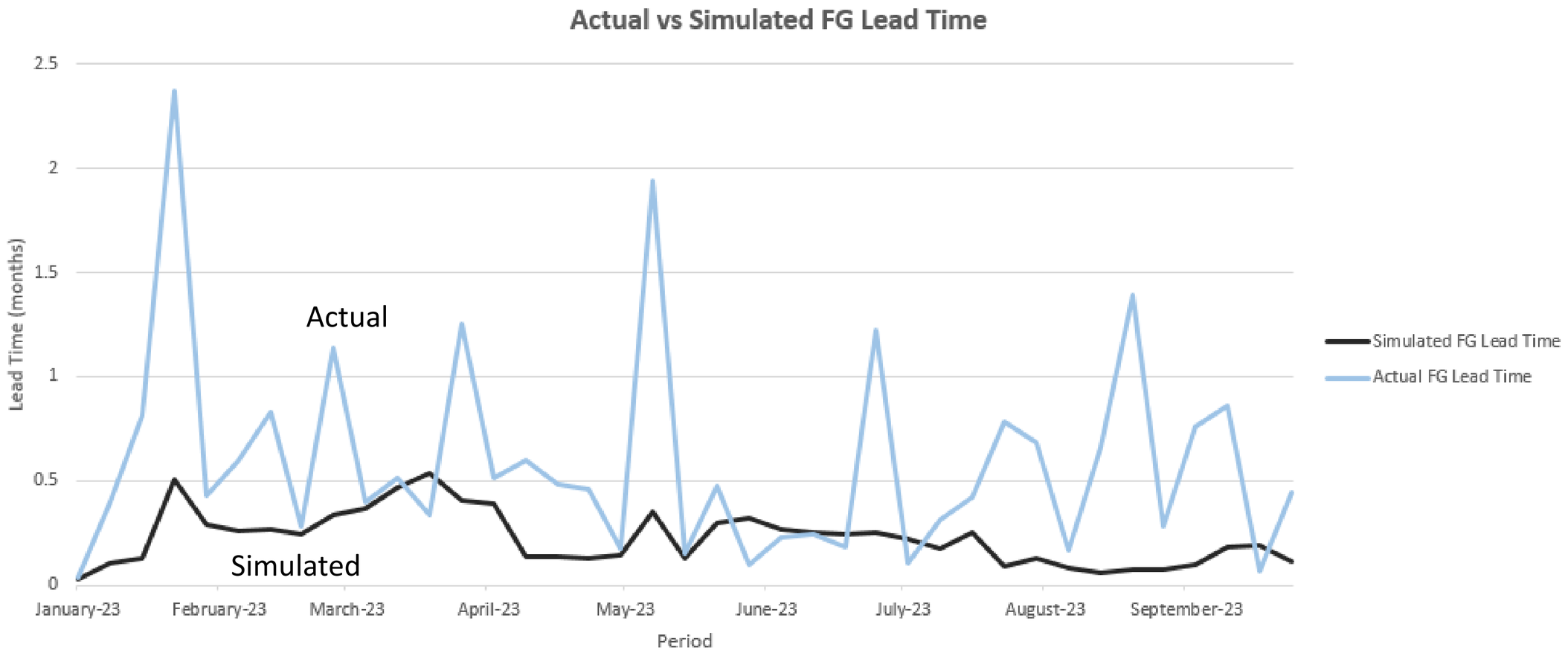


Inventory Reduced by 19.6%

Avg. Actual: 5067
Avg. Simulated:4071

Demand: actual
Supplier LT: actual

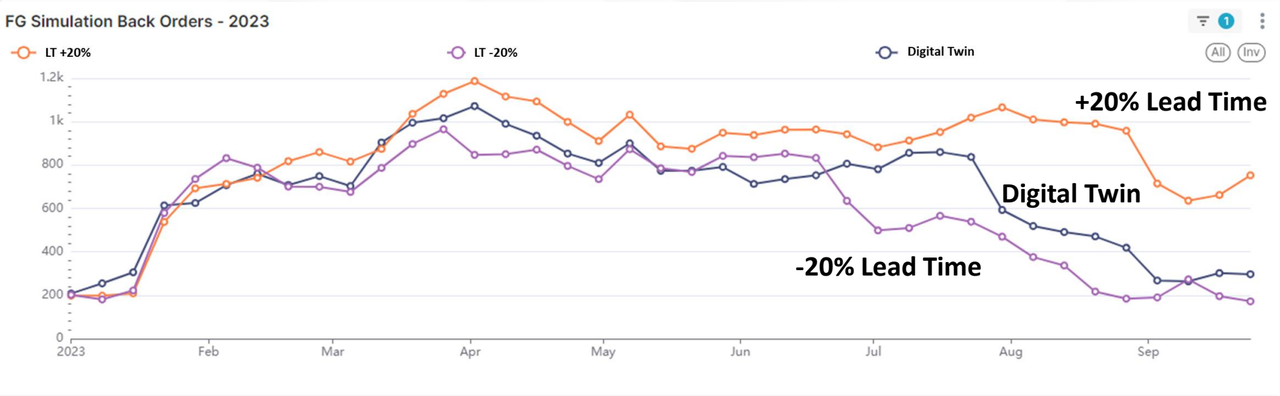
Performance of the Digital Twin – Lead Time



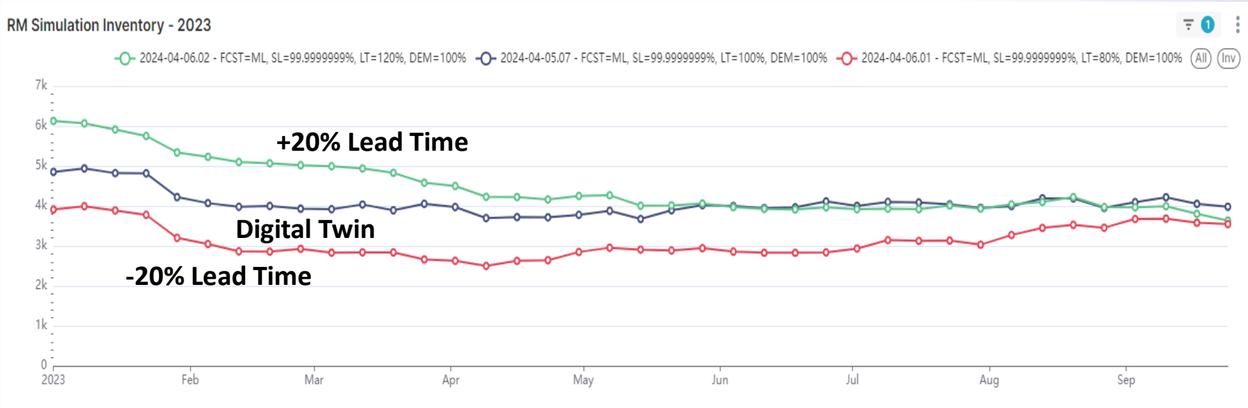
Demand: actual
Supplier LT: actual

Digital Twin Simulation Results – Scenario 1

How can **Supply Lead Times variation** impact backorders and inventory levels?



BackOrders Sim. Results

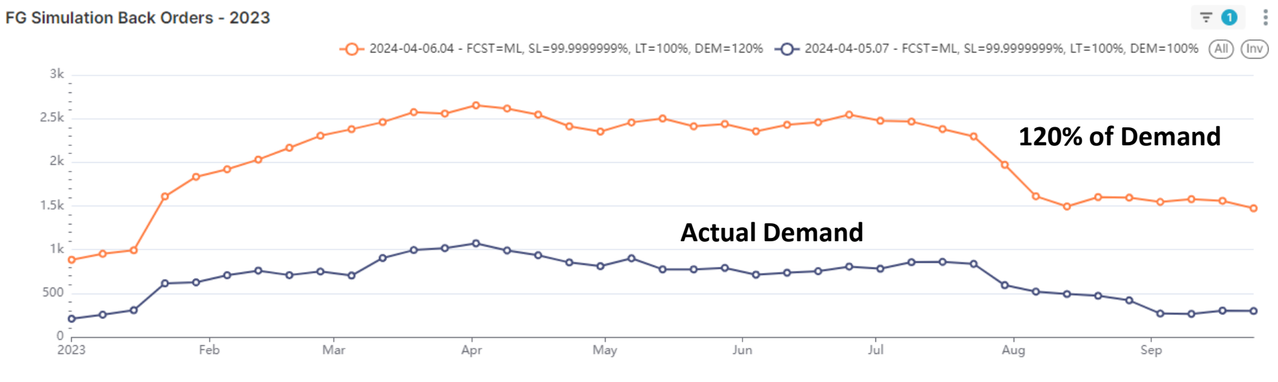


RM Inventory Sim. Results

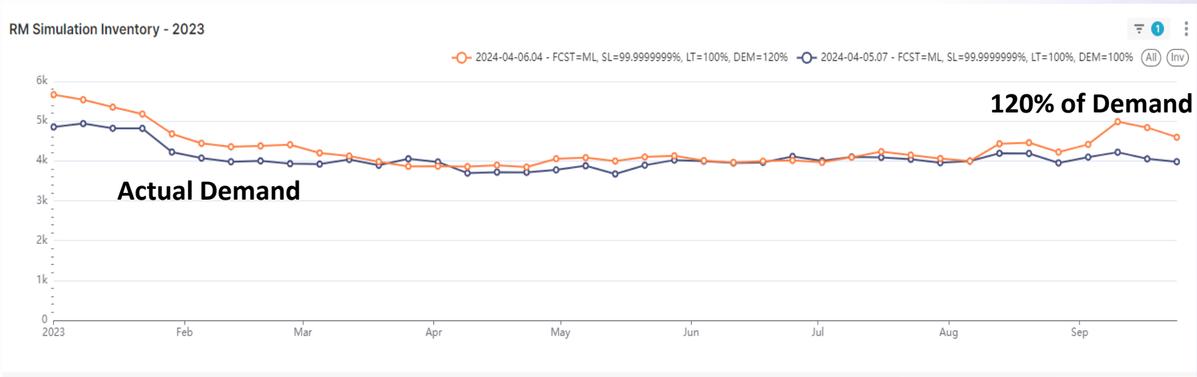
Scenarios	Back Orders (FG)	Delta Backorder	Average Inventory	Delta Inventory
Supplier Lead Time Reduction (-20%)	597	-12%	3115	-23%
Digital Twin (Baseline)	677		4071	
Supplier Lead time Increase (+20%)	852	26%	4459	10%

Digital Twin Simulation Results – Scenario 2

What would be the effect of a 20% **demand surge**?



BackOrders Sim. Results



RM Inventory Sim. Results

	Back Orders (FG)	Delta Backorder	Average Inventory	Delta Inventory
Digital Twin (Baseline)	677		4071	
Demand Surge (+20%)	2074	206%	4316	6%

PART OF A GLOBAL BRAND

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A $300M global technology hub

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RAD
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VISIFI
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DEDA CLOUD
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SERVICES

DEDAGROUP BUSINESS SOLUTION
System Integration Activities

DEDA DIGITAL
UX Design, E-commerce & Digital

DERGA
SAP Integrator

ORS
Advanced analytics & AI

4000+
CLIENTS

58
COUNTRIES

10
LOCATIONS

AI Frameworks for Rapid Delivery

Backed by Research and Deep Industry Knowledge

200 AI and ML Models accelerator library deployed at large global corporations

Proprietary Solvers, Optimizers and Event Simulators that **deliver performance at scale**

UX Design expertise that allows business users to run models on demand, and test scenarios & hypotheses

ORS GROUP APPLIED AI

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ORS' Expertise in the World of AI

Intelligent Data Processing

Forecasting
Process optimization
Automated Decision Making

Natural Language Processing

Entity & Relations extraction,
ChatBOT, Text generation

Computer Vision

Object Detection, Image Classification,
Image Segmentation

Generative AI

Image, Text & Audio Generation

Questions?

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