



# Build supply chain agility through digitization

4 strategies to improve efficiencies,  
predictability and the customer experience

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# Introduction

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Optimizing the supply chain has been an international focus across industries during the past decade. In recent years, the term “supply chain” has been on the lips of every manufacturer, supplier, retailer - and consumer.

Shelves are lacking products, prices are skyrocketing, and the challenges range from input costs and supply availability to capacity constraints and labor shortages. Everyone

is reacting with a rightful sense of urgency. Companies are looking around to identify insufficiencies and inefficiencies, trying to predict what’s next and determine proactive steps to repair what’s broken.

From day to day, it’s hard to know how much progress we’ve made. But the bigger question to ponder is: How did we get here - and how do we get out?

Good business, at its core, has always been about lowering costs and maximizing profit. And as technology is enhanced, especially with regard to manufacturing and logistics, the thought has been, “The fewer people who touch my product and the fewer empty trucks I run, the more money I’ll save.” Companies end up taking costs out of the supply chain but removing resiliency at the same time - creating single points of failure.

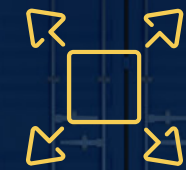
A photograph showing a woman with long dark hair, wearing a light blue button-down shirt, holding a white mug and looking at a laptop. A man with a beard, wearing a dark polo shirt, is pointing at the laptop screen. They are in a warehouse or office setting with shelves of boxes in the background.

Ultimately, attempting to optimize P&L is not the issue. So, what is the underlying cause of the current supply chain mess? Simply put, it’s companies not having all the tools and data to ask the right questions - and answer them. This is where digitization delivers.

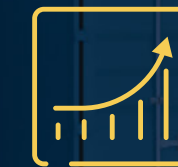
# The challenges

Higher costs, disruptions, supply shortages and geopolitical events have driven the need to manage the ripple effects on the supply chain.

Improve ability to predict demand in the tactical and strategic planning horizons



Expand scenario-planning capabilities



Enhance manufacturing performance and quality

What has to happen now?

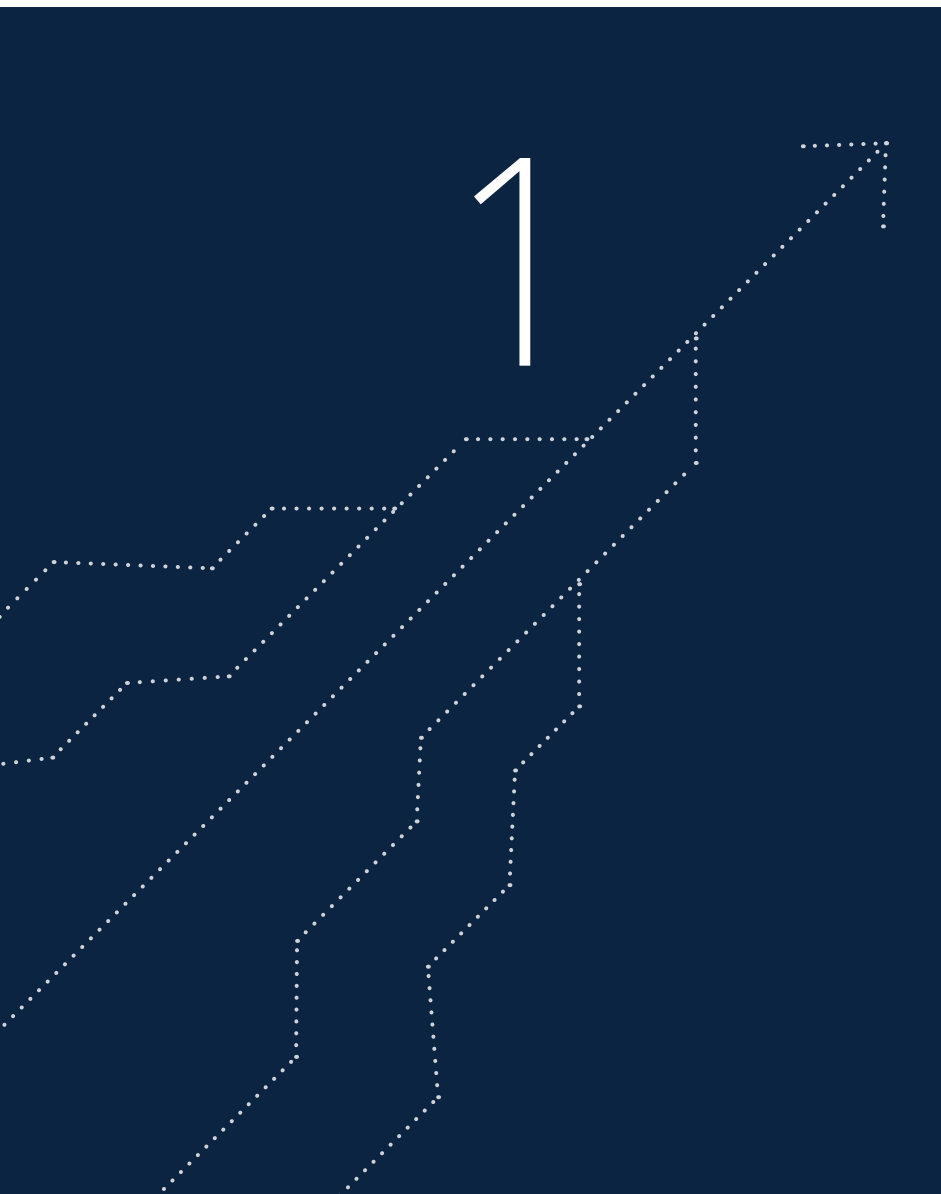
Increase efficiencies and automation across the planning and execution processes



Mitigate disruption problems by integrating the commercial planning process and optimize the total supply chain response

# The journey to digitization: 4 strategies for supply chain resiliency

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# Accelerate demand planning insights.

1

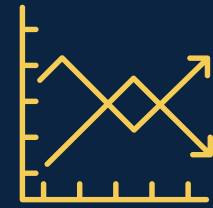


Businesses need to have all the right information, intelligence and data in hand to see what's going on around them and know how to respond with speed and agility.

Traditionally, predicting customer demand has been a factor of sales history, trends and seasonality. But in recent years' volatility, most of the typical sales and inventory data

around demand signals has been essentially corrupted, and it's no longer a clear indicator of what will happen next. To succeed, we now need to blend the traditional with new, more relevant data sources, like online searches, POS insights, syndicated scanner data and other data shared between retailers and manufacturers.

As we move forward, prediction becomes the art and science of merging all this data with the latest advanced analytical techniques, such as advanced predictive models and machine learning.



**61%** of consumer goods brands report demand forecasting is a top area of current analytics focus.<sup>1</sup>



**75%** of executives say that mining digital data sources is a priority to inform their forecasting and planning.<sup>2</sup>



**68%** of executives realize that demand and supply forecasting must be executed with greater frequency and agility.<sup>2</sup>

<sup>1</sup> 2022 Retail and Consumer Goods Analytics Study

<sup>2</sup> AI and analytics are powering a demand planning and customer experience revolution

## Digitally connect factories to link supply chain planning, material needs and production scheduling.

# 2



In today's conditions, companies are struggling to guarantee the best on-shelf availability - knowing exactly what, when and where to produce and deploy the finished goods.

Digital connectivity means everything becomes quantifiable - and actionable.

External factors aside, even when just focusing on your own manufacturing floor, having a digitized, connected factory is invaluable for assessing productivity - and profits. If you have one machine with a quality rate of 86%, for example, and it falls to 73%, you can know the exact impact of that drop on throughput. Sensors allow measurement and data collection, horizontally and vertically.

Similarly, digitization lets us see and plan for human resources impacts, such as an increase in wages, job automation and shift adjustments. The right analytical tools also enable you to run simulations to understand the impacts to production output, as well as across the supply chain.



A high-resolution upstream view and end-to-end planning connectivity allow you to have a better grip on the various constraints and their impact. You'll be able to answer questions like:

**What is the status of freight and shipping, of access to containers, trucks and drivers?**

**Do I switch lines to focus on one product temporarily - and if so, how long does that transition take and what does it do to my bottom line?**

**If I substitute ingredients for my product, how does that impact the manufacturing costs and production?**

**What is the availability of ingredients needed and the latest costs associated with them?**



As a data-driven organization, [Georgia-Pacific](#) applies analytics across a wide spectrum of use cases - not just manufacturing. The manufacturing analytics team at Georgia-Pacific runs more than 15,000 machine-learning models to calculate the optimal production settings based on current business needs. On the commercial side, the company uses analytics to recommend

pricing, determine the best day of the week to ship a certain item, and predict customer churn. Automation capabilities of the SAS® platform also help reduce downtime, allowing facilities using these tools to experience a 30% reduction in unplanned downtime.

[Get the whole story](#)

*“The advanced analytics enabled by SAS allows us to find the optimal balance of speed and quality to maximize profitability. We’re constantly pushing the envelope of what’s possible with analytics.”*

Roshan Shah  
Vice President of Collaboration and Support Center Operations  
Georgia-Pacific



## Digitally link partners across the supply chain for dynamic collaboration to anticipate disruptions and mitigate customer impact.

# 3



In the past, companies would plan for product seasons in advance and simply execute those plans, making micro-adjustments if needed.

You have to understand how every siloed investment, decision and adjustment impacts every other part of your business. By having a collaborative planning system in place, you can preemptively see cross-organizational outcomes based on every individual decision.

By being able to see predictive results, you can anticipate impact, minimize disruption and mitigate unexpected fallout of each choice.

**Even better, apply collaborative planning outside your own organization and across the supply chain.**

If a supplier knows that availability is being negatively impacted and shares that information with the retailer, then the retailer can take appropriate action to offset the impending impact on consumers.



*“ You absolutely need to be able to trace your goods and have a detailed view inside your supply chain. But it’s also important to understand your suppliers’ supply chains - what they are doing and what challenges they are facing.*

*Retailers need to plan alongside their suppliers, integrating supply chains and visibility. Without this visibility and information, they risk that goods will run out of stock. ”*

*Jon Mayes  
Trading Grocery Dev Ops Manager, Waitrose*

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& PARTNERS

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about the future of retail  
from industry experts

## Foster sustainability by balancing profitability, people and the planet within supply chain practices.

# 4



Sustainability tends to be a top-down thought process, with companies embracing big-picture environmental, social and governance (ESG) goals and pushing them downward in the organization. Whether it's strategic ESG investment management or merely

appeasing consumers, everyone is more sustainability-conscious.

But what if we flipped the script and took a bottom-up approach to sustainability - driving these efforts with data to consider an individual

perspective? For instance, what is the impact of business decisions like automation or schedule adjustments? If a robot is added to the workflow, it may seem potentially negative, but data can demonstrate that it reduces risk of injury for workers and ultimately improves their

quality of life. Or perhaps statistical analysis reveals that a human is a more sustainable option than a robot because the robotic automation uses too much power.

Determining the data-driven sustainability of the truck driver, factory worker or order picker - and improving on it - can bubble upward in the organization. And at the product, factory and warehouse levels, demand-planning processes can help measure, track

and improve ESG goals, spanning from the ground (or individual) up and then out to every node of the supply chain.

The right digitization tools allow you to accurately consider ESG KPIs alongside your standard margin KPIs - removing guesswork.



**63%** of CEOs see technology as a solution to accelerating their sustainability efforts.<sup>3</sup>

<sup>3</sup> SAS Blog: [3 ways grocers can get healthier margins on fresh foods with analytics](#)



# The path forward is clear.


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Digitization across the supply chain helps balance service levels with cost of on-hand inventory - getting the right goods to the right place on time while reducing production and total delivered costs.

Top-level organizations are using these strategies to perceive, measure and mitigate supply chain risk and improve overall network resilience.

**Don't fall behind on the road to supply chain digitization.**  
Let's start a conversation.

Visit us at [sas.com](https://sas.com)



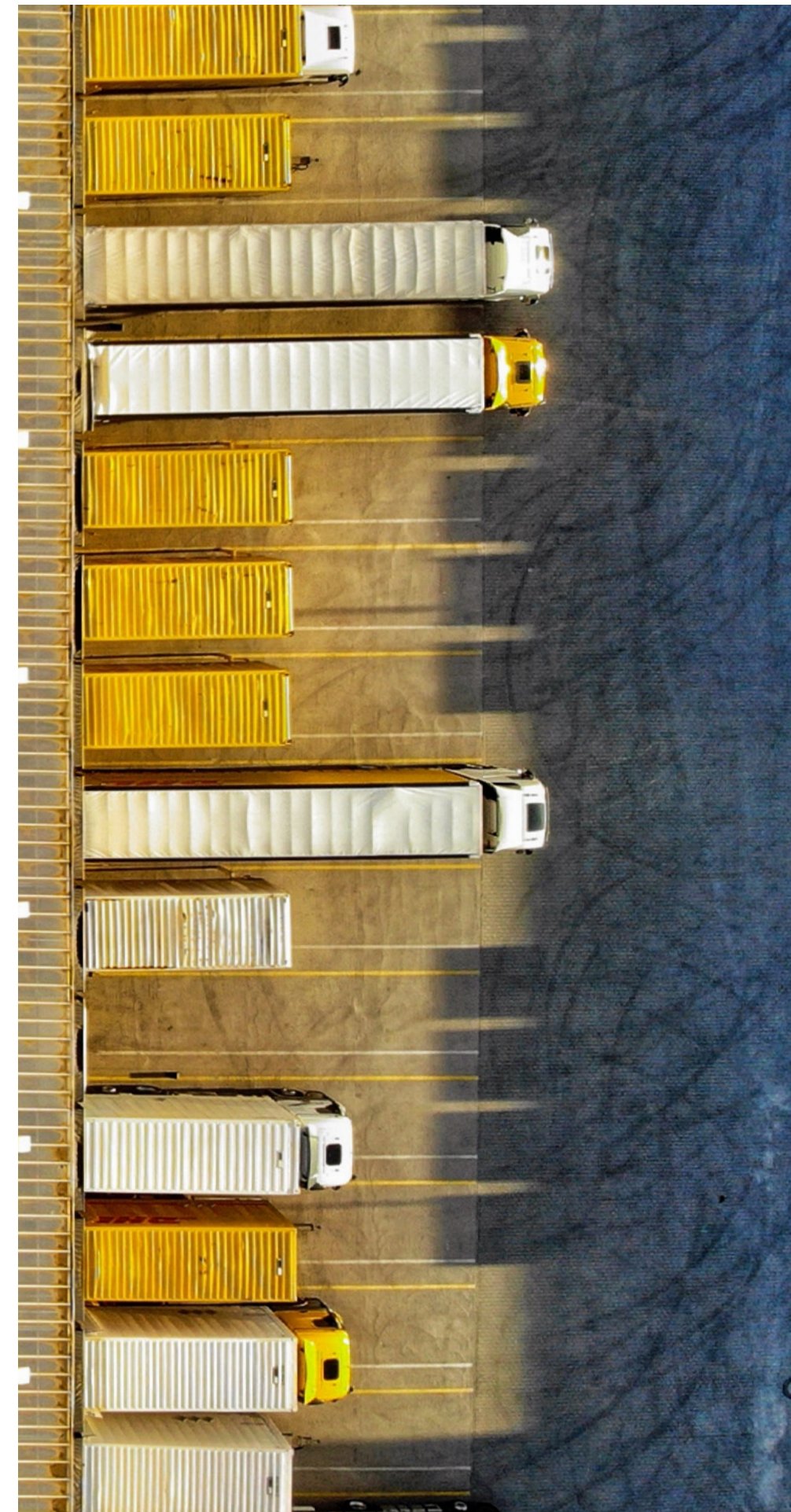
*“ Intel’s resilient supply chain helped mitigate the effects of the pandemic, chip shortages and geopolitical tensions. Together with the companies in our ecosystem, Intel continues to build an innovative and efficient supply chain to address future challenges around volatility and complexity. Digital transformation accelerates this innovation by using data and predictive analytics to increase visibility and information sharing while reducing risk.*

*Modern supply chains built on a unified, connected platform will provide the flexibility needed to minimize disruptions and offer opportunities for better collaboration and customer service. Intel’s recognition in the Top 10 of Gartner’s Supply Chain ranking for the past 11 years shows the leadership and performance attributed to our global supply chain.”*

*Jackie Sturm  
CVP of Global Supply Chain Operations  
Intel*



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## SAS & Intel

Successful analytics initiatives require tight alignment between hardware and software in the hands of skilled technologists and strategists who can put them to work in support of organizational strategies. That's why the ongoing collaboration between SAS and Intel is so important for clients. Together, we know how to connect all the dots on analytics strategies to deliver practical solutions that deliver real, measurable results - at any scale.

