

SUPPLY CHAIN SUCCESS 2022:

SOLVING INSTABILITY
WITH RELEVANT DATA
AND NEW PARTNERSHIPS

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SPECIAL REPORT

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INTRODUCTION

The current supply chain crunch is the result of ongoing instability generated by multiple events — a condition that's reshaping how retailers need to think about inventory management. The COVID-19 pandemic was the start, but even as its impact wanes the labor shortage is still present and the **crisis in Ukraine** will affect commodities worldwide. These and other factors will keep supply chain challenges top of mind into the near future.

"Things like costs rocketing and availability becoming problematic are going to cut across the whole board for retail, whether it's fashion or it's food," said Simon Croom, Professor of Supply Chain Management at the **Knauss School of Business** of the University of San Diego in an interview with *Retail TouchPoints*. "There's going to be a real problem ahead, because trying to get out of the post-pandemic or pandemic-based model is going to take a good amount of time. If I'm very optimistic, I think it's going to be **six months** of disruption. **If I'm realistic I think 2022 is going to be another tumultuous year for retail.**"

The good news is that retailers can still thrive if they make the efforts necessary to harden their supply chains against these disruptions. The primary focus needs to be on **seeking new strategies** and **finding new partners** to ride out the current shakeups. Some top tips for adjusting operations include:

- **Look for intent data in new places:** Factors including the lingering impact of COVID-19 to the conflict in Ukraine mean historical data isn't as useful at predicting demand as it once was — but retailers can use AI-powered technology to measure demand in channels like social media and dig down to the regional level;
- **Share information across the entire supply chain:** It can be a tall task just to ensure data is being shared across the enterprise, but hardening the supply chain means taking it a step further and sharing information across suppliers — and even the suppliers' suppliers — to keep every stakeholder prepared;
- **Find alternate sources for important products:** Labor shortages and other challenges are making the global supply chain less reliable than in the past, so finding alternatives — such as nearshoring or building out private label brands — is now an important part of keeping shelves full; and
- **Look for new partners in unlikely places:** Every retailer is facing the current slate of challenges together, and they can better overcome them by pooling their resources and expertise. It's a time when even direct competitors can become strong partners under the right circumstances.

INSTABILITY REQUIRES DIGGING DEEPER FOR RELEVANT INTENT DATA

Since the start of the pandemic, the retail landscape has been partly defined by uncertainty. Even the most positive developments, like the surging popularity of omnichannel services, have made historical data less reliable than in the past. Traditional demand signals still have an important role in managing the supply chain, but best practices are evolving alongside changing customer habits.



“To ensure that integrated business planning is successful, capturing demand signals in the process is extremely critical. The traditional demand signals are POS data, shipment data, discounts and promotions, and customer loyalty program data. **However, with the advent of social media and other cutting edge technologies such as AI/ML and Natural Language Processing (NLP), the feedback loop can be shortened further and lead to improved demand planning accuracy.**”

— Gaurav Joshi, Director in the Retail and Supply Chain Practices of [AArete](#)

Joshi cited a leading retail brand that ran a pair of forecast techniques — one using traditional demand planning and another that aggregated Facebook data from more than **150,000** users. The demand forecasts that used Facebook had a **5%** lower Mean Absolute Percentage Error, which measures the prediction accuracy of a forecasting method, than the traditional forecast. While the most precise and in-depth strategies can involve state-of-the-art NLP technology, it's also possible to get some basic measurements using a simple algorithm that measures, for example, the number of comments on a post.

While the biggest events of the past few years have been global, their impact needs to be measured at the local level. For example, different regions of the country reacted to COVID-19 in different ways, which impacted reopening plans for physical store fleets and is still being felt in staggered mask mandates. The culmination of multiple events can lead to vastly different customer behavior in different parts of the country, so retailers need to be ready to read — and react — to how supply and demand can shift on a regional basis.

Additionally, retailers can still find uses for historical data. Modern AI tools let shoppers simultaneously look at past and current trends and then combine them to create a stronger prediction model than what could be achieved with either data set alone. The result can be a sophisticated version of “what if?” scenario planning and forecasting.

“If I would have had a good amount of inventory in these items, in these stores, in these places, what would my sales have been?” said David Fleischer, Senior Director, Strategy & Solution Management at Oracle in an interview with *Retail TouchPoints*. “Now with strong ML and AI on top of those models, we're able to simulate what inventory would have been and should have been, and then project the sales that should have been and would have been on top of that inventory. We're using the product of those two things to create the new forecasts.”



DAY IN THE LIFE: SMARTER DEMAND PLANNING WITH AI AND ML

David Fleischer, Senior Director, Supply Chain, Planning and Optimization Strategy, Oracle Retail

This year comes with unique challenges for retailers stemming from a **supply chain** that has been slowed and made unpredictable in the aftermath of the pandemic. On top of this, retail staffing shortages persist, and customers are losing patience to the point that **80%** say delays and shortages could cause them to cut ties with their favorite brands.

Given these external pressures, there's never been a more crucial time to reevaluate your **forecasts** and put your best foot forward in the form of intelligent planning. To break through the noise of unpredictable supply and the challenges of new demand patterns, retailers are turning to machine learning (ML) and **artificial intelligence (AI)** to improve forecast accuracy, with as few touches as possible.

Demand forecasting, traditionally managed by multiple teams, may not only be inefficient but now is increasingly harder to maintain when talent is hard to come by and myriad factors — from the way consumers shop to what they are buying — have diverged from historical patterns. ML helps retailers predict changes in sales based on previous trends and customer preferences. While ML is constantly analyzing data to find these patterns, AI takes this data and optimizes it into actionable insights with a larger impact.

A Day in the Life

Consider a day in the life of a typical retail planner who manages a wide range of products across hundreds of locations. Now imagine that day with today's supply chain mess and consumers' need for instant gratification. Fortunately, AI and ML can help resolve these mounting challenges. With an intelligent demand forecasting solution, such as **Oracle Retail Demand Forecasting Cloud Service**, in place, a single retail planner can now manage multiple categories — fast-moving small or seasonal items like glasses can now be managed alongside slow-moving, high-ticket items like couches. With all of this in one place, the planner gains a single view of all inventory that can be revised and optimized with the full assortment in mind.

Forecast-Driven Inventory

Forecast-driven inventory starts with a data-driven demand forecast, which serves as the foundation and basis of inventory planning. With the right forecast, inventory can be optimized for the right channel at the right time, based on predicted demand. Working off the demand forecast, a retailer can incorporate sales, receipts and returns forecasts based on customer behavior and transaction-level insights. This allows the retailer to optimize the product lifecycle, manage safety stock and rebalance inventory. Finally, the retailer's time-phased inventory plan should be directly linked to how customers choose fulfillment services — and driven by optimized profit and service levels.

Considering how much of a planner's time each day is currently spent revising forecasts and coordinating with planners for other departments, an optimized, cohesive forecast offers a major change, allowing planners to manage by exception, freeing up time for the planner and requiring fewer touches than before.

Maximize the Value of Your Data

The right demand forecasting solution will enable retailers to take actionable steps in analyzing demand transference as ML collects and analyzes customer preferences and adapts these insights to inform assortment and availability of stock. If a customer's need-to-have item is out of stock, AI can accurately predict a customer's next choice **80%** of the time, helping retailers consider which items they should be ordering more of to accommodate for current supply chain issues and manufacturing slowdowns.

Streamlining hardline inventory is crucial to maximizing space and profits. An appliance and electronics retailer previously saw planners touching **50%** of forecasts, but when using Oracle Retail Demand Forecasting, with no touches, the retailer noticed:

- **70%** improvement in promotional forecast accuracy;
- **10%** decrease in safety stock; and
- **10%** increase in service level.

A Day in the Life, Improved

In trying times of staff shortages and evolving consumer preferences, **predictive and prescriptive models** can help retailers make small changes that yield major results. With the right technology, retailers will find even small tweaks, like a reduction in safety stock, can have a big impact on improved inventory management and store operability with little to no changes in sales — a huge cost-saving measure.

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DATA SHARING NEEDS TO SPAN THE ENTIRE SUPPLY CHAIN

Data becomes more valuable than ever in times of uncertainty, since knowing how much of something is needed over a given time frame provides a baseline that can mitigate the worst of unexpected shortages. Every retailer is already well aware of the value of breaking down silos within their organization and ensuring everyone has the data they need; the next step is breaking down silos across your entire supply chain.

“It’s essential to work with the data and connect all the information in a way that lets you see **what’s going on in each of the links in any situation**,” said Bertha Martinez-Cisneros, Coordinator of the Degree in International Logistics at **CETYS University** in an interview with *Retail TouchPoints*.

“Companies like **Walmart** work directly with the suppliers of their suppliers. They are even involved in the negotiation process that affects the cost of the product for the producer — so they negotiate price of the raw material. Think about socks: they talk to the cotton producer to establish the price of the cotton sold to the company that manufactures them to ensure the quantity of product needed to supply Walmart.”

Sharing information throughout the supply chain involves a lot of data and many potential stakeholders, which makes granularity extremely important. Most retailers won’t be able to have one-on-one conversations with every supplier, but they can find the most important relationships to develop by properly diving into their data. For instance, some SKUs deliver thin profit margins, but they are commonly purchased top sellers that drive larger baskets. In cases like this, retailers will want to work with suppliers to ensure that “driver” product is always in stock.

A fast, flexible and intelligent supply chain that can predict consumer behavior and react accordingly is the goal for any retailer, but the groundwork must be completed first. The foundation starts at the lowest levels, including ensuring all relevant data is standardized and available in a single system that will allow algorithms to start automating reviews and reporting.

The Impact of the Ukraine Crisis Will Be Felt by Retail Worldwide

Russia’s war with Ukraine will be **felt by every retailer**, even if they don’t operate in the region or source products from it. The conflict’s impact will resonate across the entire supply chain as countries adjust their imports on a global basis and certain trade routes become cut off. So even if Europe shoulders the brunt of the economic impact, shortages there will affect availability in other parts of the world as producers adjust operations based on the way the scenario develops.

“Transportation and the logistics are going to be affected between Asia and Europe,” said Martinez-Cisneros. “**It may not directly reach America, but it’s going to be in the way of products that were going to be exported to North America and the U.S.**”





KEEP SUPPLY OPTIONS OPEN BY SEEKING ALTERNATE SOURCES

While communication is important, retailers also need to seek out alternatives for those times when even well-informed and prepared partners can't supply enough to keep shelves full (often for reasons outside their control). Tight, efficient supply chains are great for bolstering the bottom line, but uncertainty around the globe calls for a larger and potentially more reliable range of options.

"The pandemic brutally exposed the supply chain fault lines and demonstrated that the existing supply chain was too fragile and not diversified enough to sustain the shocks that the pandemic created," said AArete's Joshi. "While global sourcing had always provided retailers with an option to buy goods at the most competitive rates, it created an inherent logistical risk that was exposed in 2020 and 2021. Before 2020, supply chain **efficiency** was on top of the agenda for CSCOs [Chief Supply Chain Officers], but this was replaced completely by supply chain **resilience** by mid-2020."

Both Joshi and Martinez-Cisneros suggested that U.S. retailers could benefit from nearshoring suppliers into places like Mexico and Latin America. Benefits of such moves include **cutting down on lead times** and moving production away from **the global regions most impacted by conflict**. However, Joshi noted that new partnerships require care on the part of the retailer, "since these sources would be ones that are largely untested in terms of quality, cost and capacity."

Private label brands also play a critical role. Any one retailer is competing with multiple other companies when it comes to stocking national brands, but private labels can both fill the gap when those options are unavailable and deepen a direct relationship with suppliers.

Trader Joe's can be a source of inspiration in this area. The retailer is primarily focused on private label items but manages to keep them on-trend, seasonal and in many cases unique. The retailer's success stems from a best-in-class private label program with a procurement team that spends months on the road every year to ensure the brand can source what it needs.

"Trader Joe's is a lot more innovative [compared to most retailers]," said Croom. "They use the intelligence from the supply market. They're aware of what's available, what's coming down the pipeline and what are the new product lines that could be of interest. Those aspects of the role that procurement can play is very useful."



WHY RETAILERS SHOULD EMBRACE TECHNOLOGY AND PARTNERSHIPS TO COMBAT UNCERTAINTY

Q&A with Ravi Panjwani, Vice President, Brother Mobile Solutions

Retail TouchPoints: Factors like the pandemic and Ukraine conflict have had an impact on shopper habits. How can retailers best work within their supply chains to keep up with customers' demands and adapt to modern challenges?

Panjwani: Retailers have faced significant supply chain disruptions related to the global pandemic, and unfortunately, they're continuing as we move into 2022. Factors such as world conflicts and economic uncertainty are adding to the lingering issues brought on by COVID-19.

One thing the last two years made clear is that omnichannel is here to stay. Shoppers expect their orders faster, and they're less willing to bear the burden of the cost of getting it to their door. This, in turn, is driving warehouse and supply chain managers to seek out technologies that minimize costs and human touch points, while speeding up processes.

So, today's retail supply chain managers are tasked with vetting new technologies to ensure that retail fulfillment is scalable into the future. Given the growing complexity of technologies, they don't know what they don't know. From our perspective, one of the biggest challenges they face is deciding how to best invest for current and future growth. Having a strong partner ecosystem is more important than ever.

RTP: Shipping delays and labor shortages also are impacting the ability to keep shelves stocked. How can retailers work with their supply chain partners to minimize disruption?

Panjwani: The labor shortage is a significant challenge that retailers are facing now — and it is likely to continue for the foreseeable future. The lack of talent available to work everywhere from the retail store front to the back office, the warehouse to across transportation and delivery, has a direct impact on shipping delays, reduced customer satisfaction and, of course, revenue and profits.

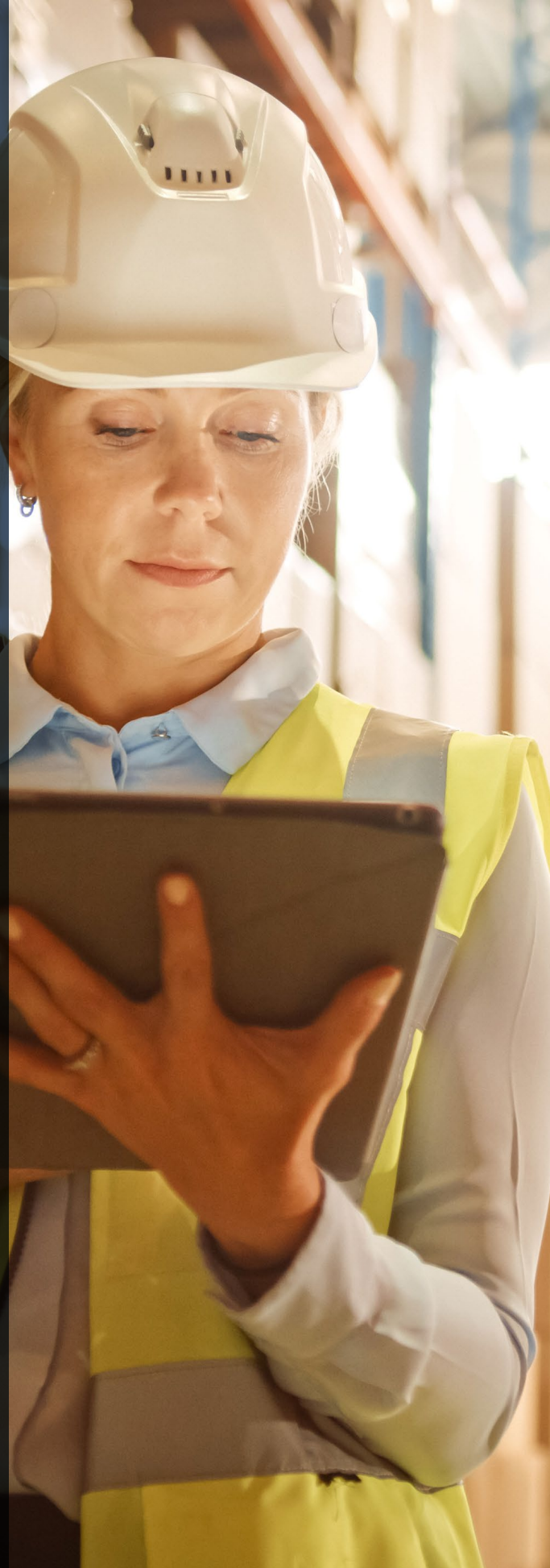
The labor situation has really become an accelerant for things that should have been under consideration for a long time. Whether it is automation on the warehouse floor, mobile barcode technologies or various other types of investments, in the past there was a reluctance to invest. However, in the current retail landscape where it's difficult to even find workers, retailers don't have any choice. Investments in automation need to be made. Whether it is software and connected mobile hardware, physical infrastructure, robots — you name it — these types of investments are becoming more mainstream, even for mid-size and small operators, because everyone is experiencing the labor issue.

RTP: Do you have any further advice for retailers looking to secure their supply chains against future disruption?

Panjwani: Overcoming supply chain disruptions and future challenges will require retailers to evaluate many types of technology and process investments that can make operations better than they are right now. We know that technology investment is a more significant portion of 2022 and 2023 budgets — but retail supply chain and operations teams will benefit from consultative vendors that can help them navigate gaps and inefficiencies and identify the best technologies. This doesn't have to be expensive.

It's really the move toward automation for even greater levels of performance efficiency and supply chain visibility. Overall, it's a matter of managing risk. Retailers have experienced the downside of broken supply chains over the past few years, and they don't want to repeat it.

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EVEN COMPETITORS CAN BE ALLIES IN TIMES OF HARDSHIP

An important element of the past two years' uncertainty is that it was truly global. Challenges weren't faced by just one country or one retail segment; everyone felt the impact to greater or lesser degrees. Retailers and their suppliers should prepare for future disruptions by working together to benefit everyone, even at the cost of some short-term pain.

Retailers shouldn't be afraid to ask their suppliers about potential alternatives — after all, they know more about the subject than anyone else, according to CETYS University's Martinez-Cisneros. The assumption here is that in such instances, a retailer will work with the alternative provider only when their first choice is unavailable, then return back to their old partner once the situation is resolved. The supplier isn't missing out on any business (since they couldn't fulfill the retailer's needs at the time), and it has strengthened the partnership by helping the retailer prepare for disruptions.

Retailers can benefit from taking this same approach with their peers. When supply becomes limited larger buyers will take precedence, which makes smaller players the first to experience shortages. Banding together can help retailers share information to determine the best suppliers, and collective purchasing agreements can let them compete with larger competitors when availability gets tight. This type of "co-opetition" can be a lifesaver during a time when world events affect every person, company and country.

"I know these guys want me out of business, but if I'm suffering that means they may be suffering too," said Martinez-Cisneros. "When the retailer is too small, sometimes it's good for them to share transportation costs with competitors. They can identify areas where they can purchase products together and negotiate better. Even if the company doesn't produce exactly what you want, **three or four** small retailers can get together to reach the size of a big retailer and incentivize a supplier to produce something that might be new for them."

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