



# **SUPPLY CHAIN VISIBILITY: HOW PREDICTIVE ANALYTICS AND RFID CAN BATTLE UNCERTAINTY**



## INTRODUCTION

The past several years have proven that uncertainty is now a major factor in retail. From COVID-driven lockdowns to port congestion to inflation, unforeseen events can wreak havoc on expected consumer behavior patterns, making getting inventory right a daunting task. These ongoing high levels of uncertainty make understanding your own supply chain more important than ever, because even if you can't predict the future, you can better react when you fully understand the tools you're working with.

"I would say the biggest advantage that comes with [supply chain visibility] is **knowing where you have stability in your supply chain**," said Balika Sonthalia, Senior Partner and Head of the Strategic Operations Practice for the Americas at **Kearney** in an interview with *Retail TouchPoints*. "How do you want to run the most stable parts of your business, versus where you have more volatility? How do you ensure that your supply chain is fungible enough to absorb the changes, and then pivot on that information? **Visibility allows you to innovate, anticipate and see the shock waves coming with just enough advance notice that you can react before getting fully paralyzed by them.**"

Proper supply chain visibility requires a range of technologies working in tandem to help retailers understand the many moving parts that result in the right products being at the right place at the right time. Some of the most important strategies and benefits to keep in mind include:

- **Overcoming complexity with predictive demand:** Omnichannel retail creates great opportunities but also magnifies supply chain complexity, so it's vital that retailers understand where demand is to ensure they're putting inventory in the right places;
- **Gaining accurate insights with RFID:** The cost of RFID tags has dropped dramatically; they are now a must-have tool that can ensure you know exactly how much you have, and where you have it, to fuel the insights that keep operations running smoothly;
- **Understanding the implications with AI:** The supply chain, like so many aspects of retail these days, is too complicated for manual spreadsheets, but implementing the right AI tools can help retailers take deep insights and turn them into efficient, effective actions; and
- **Benefiting from true supply chain visibility:** Great visibility into the supply chain is just the first step in driving efficient operations, and retailers need to make sure they have the buy-in to reap these benefits while following strategies that boost the bottom line.



## **PREDICTIVE DEMAND DRIVES OMNICHANNEL GREATNESS**

Recent volatility has made it harder to predict demand — and also made it more important to get these predictions right. Shopper expectations are elevated, and the establishment of omnichannel shopping as the norm means that retailers need to understand where demand is coming from both in terms of geographic location and channel.

As a result, retailers need to ensure their predictive demand planning tools are up to date. Getting a handle on demand can pay dividends by minimizing costs and right-sizing inventory levels, but keeping up with fast-changing habits requires tapping into powerful tools that utilize state-of-the-art technology.

"The nature of predictability and the nature of volatility in demand have become extreme," said Sonthalia. "The drivers which impact or which create the volatility have multiplied. That's one source of change. The other thing that has changed is just the sheer size of the portfolio. **Consumers have a lot more options, whether it's a product or whether it's a service in terms of delivery options.** All of that creates a lot of complexity."

Additionally, getting the most out of these predictions means ensuring they take the entire enterprise into account rather than siloing off different decision makers into different areas. Sometimes the cost of an out-of-stock (lost potential sales) will outweigh the cost of adding excess inventory, or vice versa. Considering every facet of operations with the same data from the same predictive engine will help ensure retailers discover the most profitable approach.

"What we're looking at is not just the financial aspect of the cost of being out of stock, but what was the cost of stock in the first place?" said Mark Garland, President and CEO of **4R Systems** in an interview with *Retail TouchPoints*. "Can I take an out-of-stock versus putting more stock in, and therefore get a better financial rate of return? When you do that across all those functions, and **you're using the same forecast for your replenishment, your allocation and your markdown, that's where you get one version of the truth.**"



## RFID IS VISIBILITY'S BACKBONE

Usage of RFID is quickly becoming a staple of modern inventory management. The price of the technology has been dropping: in 2021 the average cost of an RFID tag was **four cents**, down **80%** from 2011, according to McKinsey. Additionally, IDTechEx expects **39.3 billion** passive RFID tags to be sold in 2023, up from **33 billion** in 2022.

"Retailers need to have a single view of their inventory across channels, and then that data has to be up-to-date and accurate," said Greg Buzek, Founder and President of **IHL Group** in an interview with *Retail TouchPoints*. "**RFID is the killer app for this for most products, and this can be augmented by the use of computer-vision.** Retailers who were already using RFID saw **83%** higher sales growth and **80%** higher profits in 2022 in our research."

Buzek noted that RFID isn't a solution that stands alone — the information garnered from these tags can be fed into forecasting and other optimization technologies to generate additional efficiencies.

For instance, having accurate visibility into inventory counts can help retailers decide when it's better to ship from a store versus a warehouse. A store may be closer to the customer, which means it has a reduced last mile cost. However, the retailer may see that stock of that particular item is low at the relevant store, and demand planning could confirm that those items are likely to sell out before being replenished if that store handles fulfillment. In this case, the cost of an out-of-stock would outweigh the last mile savings.

RFID can also be useful for retailers that sell through third-party partners. While this practice can boost sales and name recognition, it also adds a whole extra layer of complexity to inventory management. Ensuring every item is properly RFID tagged significantly reduces the manpower necessary to keep track of items that might be going not just to different stores but to entirely different companies.

"We're a wholesaler as well, so we ship to a lot of customers," said Sandeep Baghel, VP of Information Systems at **Perry Ellis** in an interview with *Retail TouchPoints*. "We have to ship the correct units, so if I haven't implemented RFID in a location, figuring out what is going out so I can correctly invoice my customers and doing cycle counts in the warehouses is a big, tedious thing. But if the whole warehouse is RFID-enabled, I always know where everything is sitting."



## VISIBILITY ALONE ISN'T ENOUGH – AI TURNS INFORMATION INTO RESULTS

Bringing together complex demand planning and far-flung RFID tracking is more than any human can handle alone, which makes AI an essential part of any inventory visibility strategy. The right AI-powered software can comb through the massive number of data points involved in inventory visibility and turn all this noise into actionable insights.

**“There are almost a million decisions to be made on a daily basis about where to place the product and at what point in time,”** said Sonthalia. “When those million decisions are varying on an ongoing basis, it becomes really hard for the human mind or for any basic technology to do that. This is where more advanced capabilities like AI or language learning models (LLM) come into play. **They help you improve the accuracy of your prediction at a more granular level, because the decisions need to be made at a more granular level for them to be effective.**”

AI is vital to helping retailers meet expectations in both the near and long terms. Smart planning requires orders to be placed months in advance, particularly when preparing for busy seasons like the holidays, and every advantage in getting inventory levels right is welcome. Then, when it comes time to get that inventory into the right place, AI tools can help ensure each store and warehouse has an optimized amount of stock.

## RFID BEYOND THE SUPPLY CHAIN

While greater supply chain visibility is an extremely valuable benefit of RFID, Buzek also laid out several other ways RFID can improve operations:

- Improving the accuracy of inventory counts, which can make it easier to manage store-based fulfillment of digital orders;
- Helping associates find items in-store, which can make BOPIS easier to handle and lead to higher customer satisfaction; and
- Better loss prevention — while RFID alone isn't a primary loss prevention technology, it can help retailers quickly determine when loss is occurring.



## **RETAILERS NEED BUY-IN TO REALIZE THE BENEFITS**

Once retailers gain true insight into their supply chains, they need to make the most of this knowledge. More efficient stocking and fulfillment are obvious benefits with significant impact on the bottom line, but smart retailers can find even more ways to profit.

One key strategy is minimizing markdowns. Many retailers were forced to run unwanted promotions in 2022 as they tried to rid themselves of excess inventory, which cut into margins. Sonthalia noted that the actual implications can run even deeper, because excess promotions can dilute a brand's value.

Reducing markdowns is just one of the many benefits offered by supply chain visibility, but retailers will need to structure (or restructure) their organizations to use those benefits wisely.

**“A system is ultimately a tool, and a tool is only as good as the user,”** said Sonthalia. “Sometimes even an iPhone camera is not good enough because you don't know how to use it. I think it really depends on the user, and in this case it depends on the retailer — their ability to integrate the system holistically, their ability to get a broader range of stakeholders on board, the operating model around it. What's the adoption in the organization? Is the organization making decisions using the information provided by that one system? Or are you still operating in a multi-system environment where everybody is speaking of different sources of truth?”

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Bryan covers the retail industry at large, with a focus on contextual marketing, technological innovation and omnichannel developments.