Better Holidays Begin with Better Retail Insights: Maximizing Retail Analytics with Video AI

How retail analytics enhanced with AI and computer vision can fuel more successful holiday seasons for retailers

DRAGONFRUIT

Executive Summary

Perhaps more than in any other industry, AI is delivering on its promise in retail. For retailers looking to maximize sales, operational efficiency, and customer satisfaction during the upcoming holiday retail season — or simply seeking new ways to stay competitive in a demanding market — AI-driven retail insights offer an affordable and accessible way to maximize revenue and satisfy savvy customers in a demanding marketplace.

Introduction

Holiday retail sales hit almost $1 trillion in 2023, continuing to grow even in the face of inflation concerns and high interest rates. And, while different retailers may focus on different holidays — Mother's Day, Valentine's Day, or even graduation and back to school — the winter holidays continue to dominate in retail, making up almost a fifth of overall sales each year.[1]

According to data from McKinsey & Company and Deloitte Insights, consumers exhibit a blend of both in-store and online shopping behaviors during the holiday season, with notable spikes in eCommerce during major promotional events and a resurgence in physical store visits as the holidays approach. Currently, 60% of holiday shopping is done in stores in October, dropping to 55% in November and rising back up again to 65% in December.[2] [3] [4]

As market competition grows more intense, and customers become more demanding and savvy in the choices they make, the pressure grows to maximize these important holiday sales. And one effective and increasingly accessible way to do so is with new technologies like AI and computer vision, which can be leveraged to provide a level of retail insight that's far more detailed — and actionable — than ever before, giving physical stores the kind of detailed, eCommerce-level metrics that can empower them to optimize their visual merchandising and take advantage of consumer trends as they develop.

How Retail Analytics Drive Success for Today's Top Retailers

For most businesses, failing to keep track of key retail analytics is no longer an option. The practice of tracking and analyzing key business intelligence like customer footfalls and inventory levels to gain actionable insights, retail analytics are essential for setting and adjusting strategies to optimize operational flexibility and drive greater revenue, in a variety of ways.

For instance, implementing an effective plan for retail analytics helps retailers:

- More fully understand the buying patterns and preferences of customers and groups to create opportunities for cross-selling, upselling, and the kind of personalized messaging that's essential for omnichannel marketing.

- Assess each customer's lifetime value to better understand how and where to direct marketing and promotional efforts.

- Adjust more quickly and effectively to unforeseen changes in external factors, from supply side disruptions to sudden shifts in customer tastes to the arrival of a new competitor or unexpected holiday promotion.

- Predict future trends to forecast sales for more accurate and efficient budgeting, staffing, and inventory management — for instance, data shows that the peak holiday season shifts earlier each year, with 60% of shopping now completed by Cyber Monday.[5]

- More clearly map customer traffic to optimize store layouts, staffing, and promotional campaigns.

- Optimize pricing across products, locations, and seasonality based on sales trends and traffic patterns.

- Measure the success of sales and promotional events to make sure next year's campaigns are even more successful.

Essential as all these factors are, they've even more impactful during the holiday season. While online retailers have long enjoyed very granular data, physical stores have had to rely on much less detailed sales data to understand what customers are actually doing within their stores. That's all changing with the advent of affordable, AI-powered solutions that leverage retailers' existing camera infrastructure, holiday planning, and optimization efforts to revolutionize the way they understand customers and drive revenue.

How AI Is Changing the Game

In the past, accurately tracking and assessing all of these metrics was a time-consuming task, prone to misinterpretation and error. The main tools for gathering retail analytics, like foot counters and point-of-sale (PoS) systems, varied in the accuracy and quality of information they provided as well as the ability to get insights in real-time. They also frequently yielded false data — for instance, foot traffic counters frequently fail to distinguish shoppers from employees

Today, though, technology has evolved to make these tools much more useful. Applying computer vision to an organization's cameras provides a means of not just tracking store traffic in real-time but also monitoring and analyzing customers in a way that doesn't compromise their privacy but rather focuses on the larger trends of their behavior.

In theory, this could generate more data than retailers can easily process without a large team of specialists. The good news is that AI and machine learning technologies can be applied to the process to

help retailers quickly make sense of what's happening in their camera feeds, both as it happens and as long-term trends. And these AI-driven retail analytics can be customized to each retailer's unique needs, engineered to deliver the maximum return on investment.

Deep Dive: The 4 Types of AI-Driven Retail Analytics

By mapping out trends and patterns faster and more accurately than ever before, AI offers a much deeper understanding of each of the four major types of retail analytics — predictive, prescriptive, descriptive, and diagnostic — each of which can be leveraged to maximize revenue.

- Retailers can use AI to generate more accurate **predictive analytics**, helping them offer coupons or discounts to the customers most likely to use them, thus boosting sales and maximizing lifetime customer value. Predictive analytics can also help determine when staffing needs to be adjusted throughout the day, a process that Walmart has used for decades.[6]

- And with more accurate, AI-driven **prescriptive analytics**, retailers can get a highly detailed understanding of the busiest hours of each holiday season, and how they're changing over time and across the store. This info can be key in critical areas like staffing and product placement during the holidays.

- Using AI to improve **descriptive analytics** can give retailers a much clearer assessment of the performance of past campaigns to replicate their success. It also helps shed light on disappointing performances, helping fuel continuous improvement and growth. By enabling analytics based on actual customer journeys, for example, retailers can determine the reason why a product fails to sell — i.e., because it's out of stock, the customer isn't interested, or the store placement or layout is ineffective.

- And with advanced **diagnostic analytics**, retailers can use AI to more accurately pinpoint the hard-to-discern discrepancies that may be holding back sales or causing shrink — such as ineffective product packaging or lack of self-checkout loss prevention systems.

How AI Maximizes Key Retail Metrics

Given all this potential, then, where can retailers actually use AI and computer vision technology to make the most meaningful improvements to their business? Amid all the possibilities, three methods stand out as the most impactful: visual/spatial intelligence, inventory management, and marketing and sales.

#1: Visual-spatial intelligence — i.e., store layout and customer journey mapping

Visual-spatial intelligence — or the process of gaining visual insights into every aspect of a physical retail space — is key for optimizing everything from staffing and store hours to marketing and pricing.
This is nothing new. Traditionally, people counting and journey mapping have been important for understanding where customers congregate, where bottlenecks occur, and where and when products are sold most successfully. This info can help boost sales by making popular products more accessible, and improve customer satisfaction by ensuring adequate staffing during a store's busiest times.

With the help of computer vision, retailers can get a clearer idea of true traffic by distinguishing shoppers from employees, technicians, or even objects or animals. And, just as in eCommerce analytics, brick-and-mortar retailers can also track more detailed — and much more meaningful — data like the products people add to then remove from their shopping carts, or the products they engage with but do not put in their carts.

And applying AI to traditional metrics like zone traffic, peak time, and traffic count provides a much more accurate level of prescriptive and predictive analytics, giving retailers a better idea of what to expect as it prepares for the holiday season, or any other time of year.

Do customers tend to linger over a certain product without buying it? Do some product placements inspire impulse decisions, while others don't? Is there a particular visual merchandising approach being used in one store but not others? Knowing the answers to these questions — and many more like them — can be invaluable when planning holiday season layouts and campaigns.

#2. Inventory management

Inventory management has been a difficult-to-solve challenge for decades, leaving retailers struggling to sustain a successful strategy even when using one (or a combination of) the many available advanced forecasting models.

And it's a problem that can have serious consequences. It's estimated that markdowns caused by ineffective inventory mismanagement cost U.S. non-grocery retailers approximately $300 billion per year.[7] In addition, failing to have a product a shopper wants, when they want it, doesn't just mean losing a sale but potentially a lifetime customer, too.

Retail analytics systems that use AI and computer vision are finally helping solve this age-old problem. Not only can they more accurately monitor shelves and store rooms, but they can also align that info with PoS systems and online sales data to make inventory management more effective and centralized. Even better, these tools can automatically apply sophisticated prescriptive and predictive analytics to map out long-term trends that are particularly critical during the high-stakes holiday season.

The result is a more accurate, longer-range view of just what inventory is needed at any given time, helping companies minimize holding costs, avoid costly markdowns, and avoid disappointing their customers. And on top of that, the systems that use this technology can also help manage other factors that affect inventory, including shrinkage from self-checkout theft to truck turnaround times.

#3: Sales, marketing and retail media

Of course, inventory turnover is also key to understanding customer buying patterns, which helps inform the timing, placement, and extent of promotional efforts.

As we've seen above, the advancements in predictive and prescriptive analytics offered by AI systems

can help retailers more effectively target the customers who are most likely to convert. And with more powerful descriptive and diagnostic analytics, they can more readily understand the circumstances when those conversions don't happen, and make the appropriate corrections, whether it's a change in product placement, pricing, or even store hours.

In essence, these technologies give retailers a quality of insights into brick-and-mortar settings that were previously restricted to eCommerce sales. For instance, computer vision shows where customers journey through the store, how long they linger in certain areas, and what products they prefer to buy. Applying AI to this data over the course of a month, season, or year will yield insights that can lead to the most effective and informed strategies for sales and marketing.

On top of that, this data can be merged with computerized high-volume PoS data for an even more powerful store of data around customer activity and preferences. It's an essential step toward delivering a truly omnichannel experience that merges the online and offline worlds – an experience that today's customers increasingly demand (especially the younger generations).[8] And for retail media networks, it's a means to provide exactly the kind of insights that CPG customers request the most.

Conclusion

Perhaps more than in any other industry, AI is fulfilling its promise in retail business. A newer, more effective way to get fast, actionable insights into virtually every corner of an organization – from the shopping aisles to the storehouse to after-hours security – AI has the power to deliver a new level of business intelligence that's rapidly changing the rules of what's possible in retail.

What's more, these innovations are now almost universally accessible. What once required expensive and extensive hardware installations is now offered as app-based software that can be applied to a company's existing camera infrastructure. The result is radical improvements in everything a retailer needs to drive growth and success in the next holiday season, when every hour is critical to a retailer's bottom line, and all throughout the year.

Seize the Power of AI Retail Analytics with Dragonfruit AI

Capture the retail data you need to optimize every aspect of your operations with Dragonfruit AI retail data insights. From assessing employee allocation to rating the popularity of a product in different placements or regions, you can rely on Dragonfruit AI to deliver the retail insights that drive your bottom line, all streamlined in a single, simple app.

Go to Dragonfruit.ai to discover how we can help unify your online and offline data for a new level of revenue-enhancing retail insights.

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