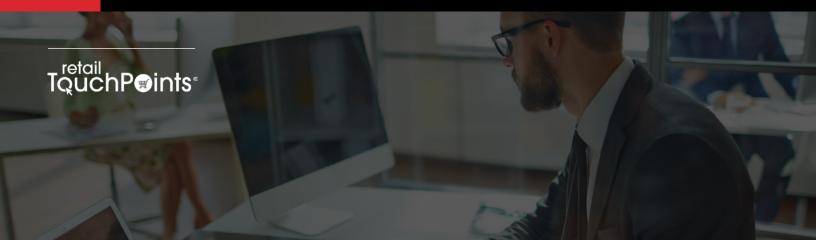# *Harnessing* THE AI TOOLKIT:

HOW MACHINE LEARNING CAN POWER PREDICTIVE PERSONALIZATION

retail TouchPoints®

SPECIAL REPORT

Artificial intelligence (AI) and machine learning are critical elements of the next generation of analytics, but without a robust implementation plan all the insights in the world won't generate any meaningful results. Harnessing the power of analytics calls for both a strong foundation of relevant data and a sharp focus on how the company will act upon the results.

"To me the key to operationalizing AI in the best way is having a very clear understanding of what you're looking for," said Michael Kim, VP of Data and Analytics at **AArete** in an interview with *Retail TouchPoints*. "Do you have enough data in terms of variety and frequency and depth? **AI algorithms need really powerful data in order to be meaningful."**

Once a retailer establishes this baseline, they can tap AI solutions to give them a more in-depth view of their operations. These findings can drive results in a number of areas, including:

- Enabling personalization efforts that take location, channel and future behavior into consideration, making them more relevant;

- Supporting wireless systems that can network with loyalty apps to deliver an enhanced in-store experience, as well as detect internal problems such as WiFi outages before they occur; and

- Optimizing merchandising and replenishment practices to prevent both overstocks and out-of-stocks.

Overall, AI-powered solutions give retailers the ability to turn **large volumes of raw data into suggestions for concrete actions.** To make the most of these capabilities, however, the solutions must present the information in a way that even non-data scientists can understand and act on.
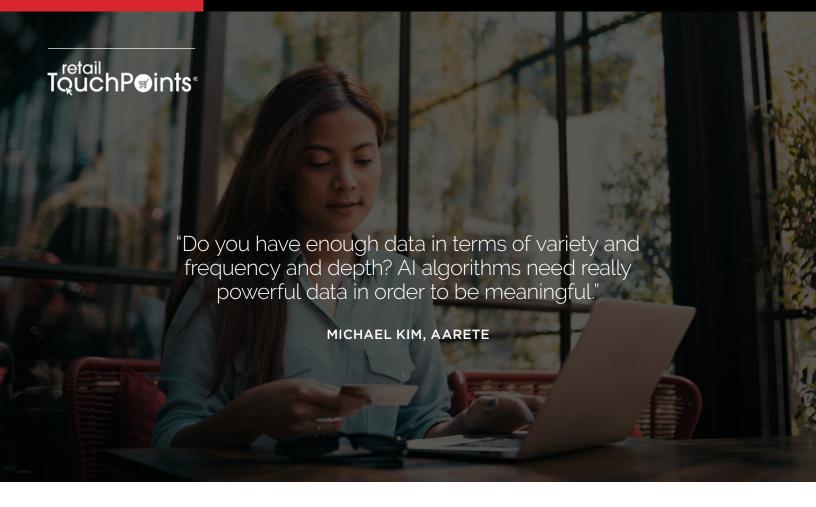
At the most basic level, achieving this requires defining two things: **inputs** and **outputs.** Inputs are the data sets that the stakeholders want to analyze to lead to the correct answer, while outputs represent the question that needs an answer. This can be a specific marketing metric, a supply decision or a recommendation that will convince a shopper to buy something.

"When it comes to the math behind it, some people won't understand and some people will," said Kim. "What people want is **the confidence that they have the right inputs answering the right output.**"

Confidence Building Case Studies: Lowe's And BBQ Guys

There are many approaches retailers can take when adopting new inputs and outputs, and different companies should take the approach that fits their particular needs. Both **Lowe's** and **BBQ Guys** shared their methods of disseminating data-driven analytics during **a session at the 2019 Retail Innovation Conference:**

• Lowe's hired a team of "analytics translators" to serve as middlemen between the data science team and other departments; and

• BBQ Guys created a data driven operating model (DDOM) that goes out daily to explain the latest findings and solicit feedback.

"Do you have enough data in terms of variety and frequency and depth? AI algorithms need really powerful data in order to be meaningful."

MICHAEL KIM, AARETE

AI ADDS PREDICTIVE INSIGHTS TO PERSONALIZATION

AI-driven insights have the ability to make marketing campaigns more precise and relevant to each customer. In addition to parsing a customer's shopping habits and applying the learnings to every marketing channel, retailers can consider the specific channel being used and the unique ways shoppers interact with each one.
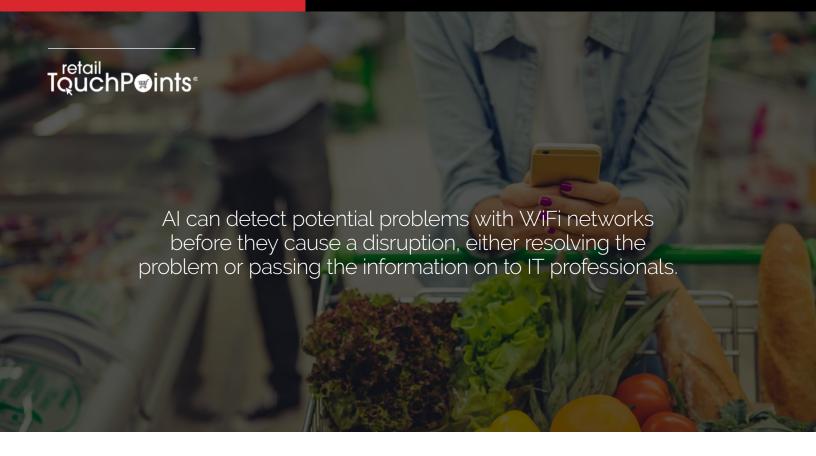
For instance, a shopper reaching a site through a search engine will likely arrive in a different context, including sense of urgency and price sensitivity, than someone who clicked a banner in an email promotion, according to Jonathan Treiber, CEO of **RevTrax**. Properly implemented AI systems can leverage unique channel data and insights to offer personalized pages with a product selection that meets their immediate needs.

AI also enables personalized offerings based on shoppers' future potential, according to Corey Piersen, Co-Founder and CEO of **Custora**. The right metrics can immediately determine whether someone was once a major customer but hasn't purchased anything in years, or if a relatively new customer has been on a buying spree. From there, promotions can be tailored based on bringing lapsed shoppers back or building loyalty in excited new customers with exclusive offerings and access to special promotions.

Personalization Case Study: McDonald's

AI enables personalization to escape the limits of e-Commerce and enter moment-to-moment interactions in-store. **McDonald's** is harnessing this technology to add a whole new level of **personalization to its drive-thru menus** — for instance, when an order for children is detected, the signage can change to upsell by suggesting a snack for the parent.

HARNESSING THE AI TOOLKIT: HOW MACHINE LEARNING CAN POWER PREDICTIVE PERSONALIZATION

AI can detect potential problems with WiFi networks before they cause a disruption, either resolving the problem or passing the information on to IT professionals.

BETTER WIRELESS UNDERLIES A BETTER CUSTOMER EXPERIENCE

Tying AI into a wireless network can upgrade a retailer's loyalty app with entirely new capabilities. Modern solutions can harness Bluetooth Low Energy (BLE) to turn shoppers' mobile devices into **pinpoint maps, brick-and-mortar search engines** and even **hyper-personalized promotion delivery systems.**

"When someone comes on site the infrastructure wakes up the app, and advertising capabilities will ping us to say, 'Where is this user?,' and we can say he's in the dairy aisle and they can offer a relevant coupon," said Jeff Aaron, Head of Marketing at **Mist Systems**. "If they have a wayfinding app they're pinging us to ask, 'Where is the user? Where is he going? What are the X/Y coordinates?' We can provide that location data."

However, AI isn't limited to improving customer interactions. Integrations that can drive efficiency across a retailer's operations include:

- Detecting potential problems with WiFi networks before they cause a disruption, and either resolving the problem or passing the information on to IT professionals;

- Tracking inventory at warehouses to optimize the routes used by both robots and associates; and

- Collecting traffic metrics that can be used to improve staffing, inventory levels and other related tasks.

AI-enabled wireless can serve as a versatile backbone that connects a retailer's footprint, enabling more efficient omnichannel operations.

Wireless Case Study: Major Pet Goods Retailer

Integrating AI with a wireless network can produce a wide range of benefits for retailers. Implementing a **wireless network powered by Mist** not only helped a major pet retailer offer more reliable WiFi and increase engagement with shoppers, but provided the retailer with the ability to monitor visits and dwell times, and to analyze zone traffic patterns and congestion points to optimize in-store operations.

AI TAKES INVENTORY MANAGEMENT TO THE NEXT LEVEL

Applying AI and machine learning technology to inventory planning can take existing practices and make them both more efficient and profitable. While planners already can achieve success by making educated predictions based on past performance, modern solutions can help these professionals achieve a level of granularity no human can hope to match.
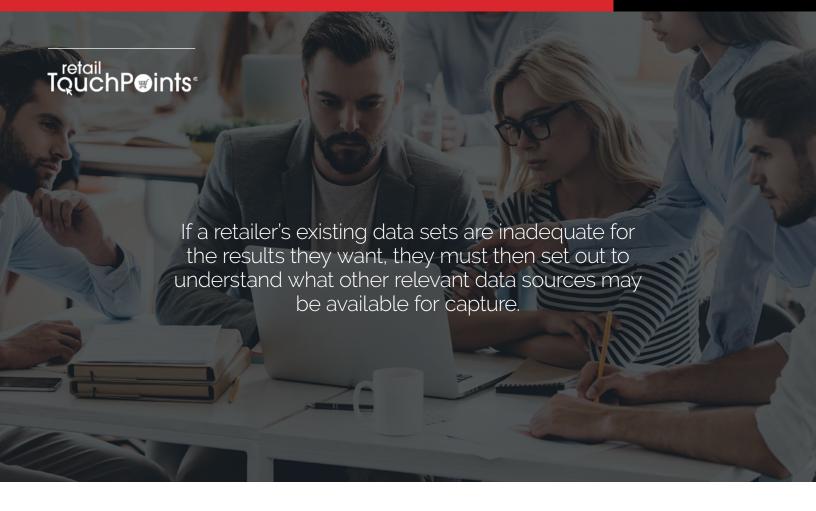
As with many other AI-empowered applications, strong results come from good data. Retailers can feed in product information such as **color, size or material,** and use that to determine **the specific features that have been driving sales.** AI-powered solutions can comb through massive amounts of data to determine which attributes shoppers truly desire, and which just happen to be shared by otherwise popular products.

"The best part of the output, looking at the tire category for example, is that you can see that at these locations you need to carry these sizes, in these performance ratings as well as these price points," said Mark Garland, EVP of Sales, Marketing & Solutions at **4R Systems**. "It's a pretty complex model if you were to look under the hood, but in essence it's looking at what we call the 'white space.' **What are the attributes that we should have in the assortment across the product category?**"

This level of granularity allows for assortment optimization at the individual store level, with the ability to track the best products for a given week. Replenishment models get equally specific, letting retailers track the number of products they should be carrying on a day-by-day basis.

Inventory Case Study: The Vitamin Shoppe

Even an in-stock rate of **90%** falls short of perfection, and AI can help retailers bridge that final gap. **The Vitamin Shoppe** partnered with 4R Systems to **implement an AI-powered inventory management system** that can enhance its existing supply chain practices with an additional level of precision. This enabled the retailer to reach a **96%** in-stock rate and boosted inventory turnover **30%**.

If a retailer's existing data sets are inadequate for the results they want, they must then set out to understand what other relevant data sources may be available for capture.

TAKE RISKS — EVEN AN IMPERFECT LAUNCH CAN BE SALVAGED

With the sheer variety of possibilities available through AI-powered solutions, it can be overwhelming for retailers that are just entering the space. While the best practice is to have a roadmap and clear plan in place, retailers shouldn't shy away from jumping into the deep end and taking risks that may not fully pan out at first.

Taking the time to get established is a worthwhile effort: a well-integrated AI model can empower a retailer at every level, according to Pierluigi Riva, Chief Technology Officer at **ORS Group**. Feeding these tools the correct data can give managers insight into the "how" and "why" behind every decision, from financial planning to tactical delivery, improving efficiency and confidence across the enterprise.

If a retailer's existing data sets are inadequate for the results they want, they must then set out to understand what other relevant data sources may be available for capture. From there, they can improve their AI program to build toward their ultimate goals.

"It's all about taking the time to work with your data engineers and your business units, just seeing what you have and making the best of it," said AArete's Kim. "It's essentially the paradigm of not letting perfection get in the way of progress as you move forward."

ORS GROUP
APPLIED A.I.

ORS delivers AI-powered automated decision systems to the retail industry. ORS's A.I. suite includes solutions for Financial and Merchandise planning, Assortment planning, Demand planning and Forecasting, Capacity planning, Production scheduling , Retail Allocation, Omni-Channel fulfillment, Sourcing, Autonomous Supply Chain, Pricing and Promotion planning, Store Network optimization and performance benchmarking. It also includes a full analytics suite. Representative customers include Brooks Brothers, Luxottica, Benetton Group and Geox.

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