BOLSTERING CUSTOMER RELATIONSHIPS WITH BIG DATA

Using advanced analytics, retailers better understand customers to deliver what they want, when they want it.

While they may experience problems keeping up with demand for hot items, retailers are overstocked with data. What's in relatively short supply is an understanding of what it all means and how to act on it quickly enough. The inability for many retailers to get insight is caused in large part by the stockpile itself — the data that resides within their own systems and keeps piling up from new sources represents a massive haystack. Finding the needle of insight within is the challenge for many retailers.

Big Data technologies have incalculable potential to help retailers optimize everything from supply-chain logistics and marketing to customer engagement. But first retailers must harness the data so they can apply advanced analytics and then act on their findings while the data is still relevant.

"Today, IT staff in retail organizations spend 50 percent of their time manually aggregating and manipulating data, and that doesn't include analyzing or acting on it," says Scott Duby, director of global retail solutions at IBM. Compounding this complexity, he says, is that 80 percent of data that holds value for retailers is unstructured, much of

it living outside their operations. In a 2014 study conducted by uSamp, 42 percent of retail IT respondents cited the complexity of implementing Big Data initiatives as their biggest stumbling block to moving forward.

The good news: The industry is making progress on several fronts. For instance, retailers are effectively analyzing data captured from geolocation and online sources to increase engagement in physical and digital channels. In e-commerce, retailers can analyze real-time data to improve customer experiences on-the-fly. Meanwhile, technology providers continue to invest in developing sophisticated on-premises and cloud-based enterprise analytics solutions, perfecting the infrastructure that pulls everything together and helping retailers realize 360-degree views of their customers.

Mind the Bricks and the Clicks

Achieving this full-circle view has proved challenging within individual sales channels, not to mention across them. Retailers continue to work to integrate their digital and physical channels to provide a seamless, omnichannel customer experience. This integration is key to maximizing value from analytics investments.

To date, retailers have found it much easier to analyze and take action on data captured from online shopping and other web-based activities than in physical stores. In addition to leveraging locational data, says Mary Shacklett, president of research firm Transworld Data, retailers should be analyzing data from in-store video, as well as voice from call center interactions and other sources.

"They're not using video aggressively enough to analyze merchandizing activity that could trigger bigger overall purchases," says Shacklett. "Using analytics algorithms to break down video, they can understand the optimum placement of promotional items by analyzing traffic patterns and picking patterns."

As the digital and physical realms continue to merge, retailers must engage customers wherever they are. IBM's Predictive Customer Intelligence product, for instance, automatically aggregates customer data — including digital and physical shopping patterns, social analysis and sentiment analysis from call center interactions — to create predictive models in real time to help retailers customize product recommendations. "The ability to optimize an offer so it's timely and personalized increases conversion

and customer satisfaction, and offers opportunities for cross- and up-selling that further strengthen brand loyalty," says Danielle Dahlstrom, global retail solutions leader for analytics at IBM.

Analytics Architecting

With networked devices and sensors constantly generating data, "everything is a potential source of knowledge," says Brad Shimmin, service director of business technology and software at research firm Current Analysis. This requires retailers to architect for sensors and systems that generate data they know they need, as well as for data from within and outside their operations, that they might leverage in the future.

"When architecting the stack, you can't always predict what you'll collect and use," says Shimmin. Data sources continually shift, so IT teams will need to invest in a flexible infrastructure and analytics platforms that can readily pull in new resources.

Among these sources is a growing number of data plug-ins available from cloud app providers. Along with these connectors, says Shimmin, is a crop of lightweight data visualization and discovery tools that almost anyone — from data scientists to business users — can use to query unstructured data. Combining these with retail domain expertise can yield powerful results.

When deploying analytics solutions, retailers should also determine how they'll work at the presentation layer. They may have available data they can capture for analysis, but it needs to be presented based on the business role of the user. "Analytics and actionable insight must be

integrated into business decision-making processes and presented in an easily digestible way," says Duby.

Big Data Starts at Home

Most retailers are in the early stages of Big Data adoption, says Jon Stine, global director of retail sales at Intel. To get the most value from their analytics initiatives, he recommends they start with the structured data behind their firewall. "Start with transaction logs, followed by customer data and product attribute data, and ensure it's cleansed, de-duped and consolidated so you can begin to use it," he says.

The next step is to analyze this structured data to understand basic business elements. "Just conducting assortment analysis, for instance, can be hugely valuable," Stine says. At this point, the retailer starts to understand patterns and can begin to build predictive models.

Retailers can then start integrating their e-commerce data — customer demographics, visits, dwell, movement, purchases — and analyze it to discover leading indicators of potential behavior. After that, they can start including publicly available sources. They might test, for example, weather and social media patterns as predictors when paired with transaction logs.

The key for retailers undertaking Big Data initiatives is to "build a pyramid of knowledge incrementally, taking advantage of it for multiple uses along the way, before instrumenting bricks-and-mortar," says Stine "You can begin testing beacons and other instrumentation, but you need to first get a handle on your own structured data to maximize value." ■

Improving App Performance with Big Data

By combining analytics with application performance monitoring tools, retailers can tune applications serving customers to improve availability and performance.

For instance, by knowing when product demand will spike, they can redistribute workloads or use cloud services to ensure that users maintain the shopping experience they expect.

Retailers can also improve the performance of analytics solutions themselves. In the past, retailers were forced to rely on batch processing, says Danielle Dahlstrom, global retail solutions leader for analytics at IBM. "Now we're at the point where we can capture and analyze customer information in real time, thanks to advances in the supporting infrastructure," she says.

39%

The percentage of consumers who identified greater efficiency in the shopping process (such as ensuring items are in stock or speeding checkout times) as the area retailers most need to improve.

To learn more about how advanced IT can deliver a competitive advantage, read the CDW white paper "Driving Retail Success with Technology Innovation" at CDW.com/retail-intentional-innovation