

# Plenty of Food for Those with the Appetite

## An Overview of the Retail Analytics Trend Research Study

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**IMAGINE** yourself a guest in a high-quality restaurant. The food being served to you is plentiful, with huge portions of many different courses. Unfortunately, you've eaten only a couple of hours previously, and you're still digesting previous meals. Though the food itself is clearly of a high order, it's somewhat foreign to you—the opposite of comfort food. While you

sense that the restaurant's offerings are both nutritious and delicious, the volume and timing make it difficult for you to enjoy. You're a little worried, however, that other diners will eat your lunch if you don't eat it yourself.

That's the situation faced by many retailers today when evaluating not restaurant food, but the data and analytics that could transform their businesses. In this summary of a major research project on the state of retail analytics (see "About this Research"), I'll provide a sense of the breadth of analytical options available, some broad analytical trends, and some of the general issues in taking advantage of them. For more detail, see the complete report on the research.

### The Opportunity and the Challenge

The opportunity to achieve competitive advantage from "analytical retail" is enormous. With these tools, retailers could:

- Develop close relationships with customers based on a deep understanding of their behaviors and needs;
- Deliver the targeted advertising, promotions and offers to customers that will motivate them to buy;

- Maintain only the inventory that is sure to be sold quickly, with no excess or stockouts;
- Charge exactly the price that customers are willing to pay at any moment;
- Locate stores, distribution centers, and other facilities in optimal locations.

A few leading firms have already achieved dramatic benefits. Kroger, for example, gets a 40% redemption rate from its analytically-targeted coupons, compared to an industry average of 2%, and believes the promotions have increased overall sales by 5%. CVS, which uses analytics to target coupons at the point of sale, views its analytical capability as a nine-figure profit center. Hudson's Bay Corp. in Canada traced a 2-to-1 return on its database management and analytical efforts, and broke up a \$26 million fraud ring with one analytical application. Overstock.com used an analytics-based gift recommendation system on its website, and customers who used it bought 2.5 times those who didn't. There are many other such impressive stories from early analytics adopters.

Most retailers, however, like the diner in the restaurant, find it difficult to digest all of the data, technology, and analytics that are available to them. They are drowning

### About this Research

In order to learn about major analytical trends facing retailers, our research team contacted 33 major retailers in the second half of 2008. We conducted telephone interviews with a wide variety of retail firms and executives, including grocery, apparel, outdoor, fast food, and home improvement firms. We spoke with supply chain, marketing, and IT executives. We spoke with online, catalog, and "bricks and mortar" retailers. In each interview, we asked executives to describe the trends in analytics and data that most affected their businesses. We also interviewed more than 20 experts in retail technology and analytics, including consultants, vendors, and academics. For each major trend area, we prepared a section describing the trend, its underlying rationale, the management issues involved in taking advantage of the trend, and the key exemplars of the trend among major retailers and their partners.

in data from POS systems, websites, and internal transaction processes. They can't absorb all the new analytical technologies that vendors have made available. They don't have the skilled analysts to help them improve key decisions. They're not familiar or comfortable with strategies built around analytical capabilities. And all of this takes place at a time when the economic situation makes it difficult to survive, much less invest to thrive.

Some firms, of course, have an advantage in digesting all this data and analytics. They are, for example, the online retailers such as Amazon and eBay, which built their businesses around web analytics in the first place. Catalog retailers, who have long been heavily focused on response modeling and the analysis of lift, also have an advantage in their early focus on addressable customers. For these restaurant diners, analytics are meat and potatoes.

can be traced in some way to initiatives begun at H-E-B." The grocer's current Chief Information Officer, Gavin Gallagher, points out, "Analytics are king at H-E-B. They are where I plan to spend most of my money. There is much more competitive advantage with analytics than in installing more transaction systems."

### The Breadth of Analytical Options

One of the more interesting results from the research is the breadth of analytical activities being pursued by retailers. The preliminary list of analytical activities in retail is listed at the end of this document. These activities are relatively well-established among retailers, with at least several adopters using production applications. The list of emerging analytical activities in retail is even longer, and will be included in the final report. Each of them relies on several key prerequisites, including high quality data

of their strategy, business model, or organizational capability for support with analytics.

For example, companies such as Brooks Brothers, Nordstrom, and Nieman Marcus have long-term relationships with their best customers as their primary goal. Each of these firms has a clienteling system in place to capture customer interactions and manage customer relationships. Incorporating analytics into clienteling systems for "next best offer" capabilities is a reasonable objective for such firms in their futures.

WalMart realized a couple of decades ago that supply chain analytics were key to their success in keeping costs low and product availability high. Now it's time for the giant retailer to pursue a relatively new set of targets involving customer interactions and the shaping of customer demand based on available supply.

It would not be sensible for a retailer focused on low cost to have its initial analytical efforts address customer loyalty and close personal relationships. The margins achieved by low-cost retailers would probably not justify a premium for customers for displaying loyalty, and they probably also wouldn't be able to afford the information and analytical infrastructure (people and technology) to mount a major analytical initiative. Supply chain and pricing analytics would be more logical for such a firm.

The analytical focus of retailers should also be influenced by their economic environments. Loyalty, product selection, and clienteling analytics are typically focused on growing revenues in periods of economic growth. In difficult economic times like these, however,

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Despite challenges of economics, management unfamiliarity, and the difficulty of identifying customers, some traditional retailers are also heavily focused on analytics. H-E-B, for example, has always been an innovator among retail grocery chains; Len Schlesinger (professor at Harvard Business School, later Vice Chairman of Limited Brands, now President of Babson College) noted: "Virtually every substantive innovation in the supermarket industry in recent years

in an accessible warehouse, and management interest in fact-based decisions.

The broad range of possible analytical tools that retailers could adopt makes it essential for retail executives to understand which analytical activities match their strategies and organizational capabilities. They can't pursue all of the possibilities with equal rigor. Therefore, they have to target particular aspects

hard-pressed retailers are more likely to pursue applications such as promotion effectiveness, marketing mix allocation, and labor force analytics, each of which can reduce costs and improve profitability.

## Broad Analytical Trends in Retailing

The most common analytical trends may be obvious to astute retailers, but few have mastered them. The “greatest hits” of retail analytics fall into both analytical process domains and organizational changes. First, three major analytical process trends:

- Analytics for customer centric marketing—Analytics are being used to identify segments and desirable customer groups, and then to target a variety of marketing activities to individual customers. They include advertising, promotions, product recommendations, pricing, customer service levels, and loyalty benefits. The goal is to ultimately arrive at a segment size of one. While no retailer has achieved this objective for all of the marketing activities mentioned, virtually every leading retailer has some initiatives underway in this regard.
- Analytics for supply chain optimization—Every supply chain manager would like to minimize inventory while avoiding stockouts. Analytics—along with good inventory management systems, well-oiled supply processes, and collaborative relationships with suppliers—are the key to supply chain nirvana. WalMart has led other retailers in supply chain efficiency, and in providing information and analyses to supplier partners. The rest of the industry is now catching up to their long lead.
- Pricing and merchandising optimization—Any company wanting its analytical activities to hit the bottom line would be well-advised to start with pricing. In retail, pricing optimization typically begins with markdown optimization—the end of the pricing cycle—and moves forward slowly to initial price optimization. Then firms realize that price is only one aspect of merchandising, and they begin to address assortment optimization, shelf space optimization, and optimization of initial order quantities. Each of these activities is difficult to accomplish, but can add considerable value.

Key trends in the organization and management of analytics in retail include the following:

- Centralization of analytical resources—Leading firms are beginning to centrally manage or coordinate analytical resources such as data, technology, and analysts. It’s the only way to connect diverse sources of data (supply and demand, for example) and to coordinate analytical initiatives involving customers, suppliers, and internal capabilities. Companies are increasingly centralizing data management, developing enterprise data warehouses allowing cross-functional analytics. While it may not make sense for some organizations to fully centralize all analytics, it’s usually desirable for analytical silos to collaborate. WalMart, for example, has formed an “Analytics Center of Excellence” to coordinate across diverse analytical functions.
- Shortage of analytical talent—It’s often difficult for retailers to find

and retain all the high-powered quantitative analysts they need. Therefore, several retailers are collaborating with external suppliers—either vendors or consultants in the “analytical ecosystem,” or offshore analytical outsourcers. Staples, for example, works with both onshore and offshore firms to build its analytical capabilities.

- Shift in analytical power from manufacturers to retailers—Historically, manufacturers (particularly in grocery and consumer packaged goods) did much of the analysis for the retail industry. Many large manufacturers served, for example, as “category captains” for their retailers. Now, however, retailers with scale and sophisticated analysts are slowly taking back analytical functions. They are managing their own categories, optimizing their own shelf space, and monitoring the lift of their own promotions. In order to still provide value, manufacturers will have to offer new analytical insights on how best to market their own goods.

Of course, these are only the broadest, most sweeping trends. The final report will describe these and many more trends in greater detail.

## Realizing the Potential of Retail Analytics

In this last section I’ll describe how retailers can realize the vast potential of these analytical tools and business approaches. In addition to focusing investments, as I discussed earlier, executives who seek competitive advantage from retail analytics must take

an enterprise-wide perspective on them. Retail analytics historically are embedded in a set of organizational silos. But the only way to make a difference with analytics is to take a cross-functional, cross-product, cross-customer approach. It's also necessary to establish bold goals for what analytics can do in retail organizations. Sir Terry Leahy, the CEO of the analytically-focused grocery retailer Tesco, says that the mission of the company is to earn and grow the lifetime loyalty of our customers. Their core aim, he says, is "to understand customers better than anyone." Analytics have a purpose and a context in visionary statements like these.

Leahy's comments also suggest that senior executives must lead the analytical charge. Building and applying analytical capabilities can't be left to middle managers and professional analysts; only senior leaders can mobilize the entire organization. At Sears Holdings, for example, Chairman Eddie Lampert is aggressively driving improvements in part through much greater use of analytical and fact-based decisions. He's even a frequent user of analytical tools himself.

Given the current retail environment, it may take a bit longer for retailers to transform themselves into precision analytical machines. However, the overall trends are clear: retail is a data-intensive industry, and taking advantage of all that data to operate and manage the business

better requires analytics. The good news—and the bad—for retail analytics is that most retailers have only scratched the surface of what is possible. The food on the analytical table for retailers is both bounteous and delicious; all that remains is for retail executives to revive their appetites, and eat heartily!

*This independent research study is being conducted by the Tom Davenport and the Babson Working Knowledge Research Center, and is co-sponsored by SAS and Teradata. If you would like to receive the full research report, please visit: [www.sas.com/davenportretail](http://www.sas.com/davenportretail).*

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## Selected Retail Analytics Trends

| Type of Trend               | Trend   |
|-----------------------------|---|
| <b>Analytical Process</b>   | <ul style="list-style-type: none"> <li>Assortment Optimization and Shelf Space Allocation</li> <li>Customer-Driven Marketing</li> <li>Fraud Detection and Prevention</li> <li>Integrated Forecasting</li> <li>Localization and Clustering</li> <li>Marketing Mix Modeling</li> <li>Pricing Optimization</li> <li>Product Recommendation</li> <li>Real Estate Optimization</li> <li>Supply Chain Analytics</li> <li>Test and Learn</li> <li>Workforce Analytics</li> </ul> |
| <b>Organizational</b>       | <ul style="list-style-type: none"> <li>Adoption and Use of Analytics</li> <li>Analytical Ecosystems</li> <li>Centralizing Analytics</li> <li>Store-Level Empowerment</li> </ul>   |
| <b>Strategic Initiative</b> | <ul style="list-style-type: none"> <li>Analytical Performance Management</li> <li>Multi-Channel Analytics and Data Integration</li> </ul>   |



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