Connecting Data Models across the Organization Help Retailers Regain Control

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Over the last 15 years, the retail industry has been reinvented thanks to a technology driven revolution in shopper behavior. Some retailers have disappeared as their sector moved to online sales or digital (i.e. Circuit City, Blockbuster, Borders, etc.), while others strive to remain relevant.

Today's industry leaders achieve and maintain their dominance through the competitive advantages of e-commerce and offering an ubiquitous customer experience designed to enable them to interact with their brand anywhere, anytime, and always on the customers terms.

Anticipating the Customer Experience
Brick and mortar retailers have transformed from offering a physical retail presence to delivering a comprehensive omnichannel experience. Predicting their customer's shopping patterns and anticipating demand for distinct product attributes such as style, size, color, and seasonality while ensuring availability,

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immediate delivery, and an ease–of-use experience has become standard. Retailers have one chance to capture the sale

or lose the customer to a competitor who is only a click away and fully prepared to capture and deliver on the customer's expectation.

Retailers have always performed some level of analysis to better understand their customer's demand for products and services and map their allocation and replenishment activities to those expectations.

But like todays successful retailer's, today's retail analytics solutions bear only a passing resemblance to methods of the past and tie together an array of data to help predict how to maximize their revenues in the shortest time. To anticipate and deliver successful customer experiences, today's retailers are addressing four questions and engaging in a progressive analytical process.

What Happened?
First, the question of 'what has happened' must be answered. This is a hindsight view or the transactional (historical) pattern of overall past performance. What was the outcome of the various programs, (promotions, campaigns, actions, etc.), executed by the organization? Also, what was the cost benefit of these initiatives? This is descriptive analytics traditionally delivered by OLAP analysis and reporting, dashboards, and data visualization techniques.

Why?
Second, the question of 'why the resulting outcome occurred' is analyzed. In this phase, diagnostic analytics, focus on applying context to the data to discover trends or casual relationships between variables and outcomes. By applying

probability and insight on the question of 'why', a more technical understanding of how factors interacted to produce the outcome is summarized by the descriptive analytics process.

What will Happen?
Third, 'what will happen' is addressed through predictive analytics techniques. This process is accomplished through a deeper analysis of the data with statistical

techniques that identify trends. Careful choice of proper data sourcing and statistical modeling is critical. Rather than applying simple filters to past data as with descriptive analytics, predictive analytics gives data-driven insight on expected consumer behavior.   Predictive analytics is popular in analyzing behavior within social media platforms as algorithms are applied to grant visibility of brands to users. A limited number of retailers engage to the predictive level, but the benefit of applying these techniques is viewed as a competitive advantage for the future.

Affecting Outcome
Lastly the final phase, 'how can we impact the outcome', is addressed through prescriptive analytics techniques. It goes further than forecasts made by predictive analytics and recommends what step can

be taken that will result in a positive impact on performance. In anticipation of changes in consumer sentiment, timely adjustments in inventory or operations can bring about a positive outcome. The challenge can be to affect these changes with real-time operational agility. Overall these techniques enable retailers to respond with data-driven accuracy at the granular level to maximize customer engagement at the critical time of the purchase decision. When a retailer can impact the positive experi-

ence of a customer, it is likely to result in reoccurring occurrence and hopefully similar positive outcomes.

Operational Analytics

Besides analytics that serve to understand customer behavior, leading edge retailers are advancing analytical techniques in operational areas that reduce costs and increase profits.

Inventory Management: When a retailer invests in inventory, they tie up capital and incur the associated risks of anticipating product demand. Conversely, not having the inventory likely means losing the sale. The challenge resides in understanding the latest trends and patterns which can often be found in analyzing the data. This information allows procurement to be creative, often shifting the risk to vendors and turning inventory more quickly. A relatively new practice is to expand the distribution

network by making stores direct ship store inventory for orders generated online. Overall, reducing inventory generally has a cascading cost reduction in warehousing and related costs.

Channel Realignment: Traditionally the most significant costs managed by retailers is the cost to operate the 'brick and mortar' store. With the success in online shopping channels, physical stores are being reduced in favor of online channels. Although it is unlikely the 'brick and mortar' stores will be eliminated, effectively they become a marketing cost to promote brand merchandise.

Retailers must be armed with the analytics to monitor and manage these costs due to their increasingly unproductive (overhead) nature.

Loss Prevention: Historically, retailers have always been challenged by the bottom line issue of loss prevention. The combined financial costs associated with shrinkage, theft, and fraud can be substantial. When loss prevention managers drill down and analyze these loss factors, they can identify abnormalities, take action and mitigate losses associated with inventory shrinkage or implement targeted loss prevention programs.

Supply Chain Management: With the demand on retailers to fulfill orders in hours rather than days, as well as managing product delivery costs, it is more imporant

than ever for retailers to have real-time insights into the supply chain. Visibility must span from producer to customer, while maintaining optimized inventory levels to ensure inventory is turning as quickly as possible at the highest possible price.

Merchandising and Brand: With the face of retail continuing to change, product placement, upsell opportunities, and point of sale displays are three of many evolving areas. Analytics drive the basis for knowledge based decisions. Quantitative measures of customer traffic flow driven from such factors as window displays and store layouts are influenced by product placement and point of sale displays. Analyzing customer purchasing habits allow for positioning for warrantees and other upsell options at the critical point of sale opportunity. Any analytical data that provides insight into changing trends in style, color or product function can put the retailer or brand out-front and influence buying decisions.

Additionally, in-store analytics focused on affecting customer behavior are making a real difference. They improve the shopping experience for customers, improve customer support, assist in preventing theft and burglary, and measure store performance in real time.

In the end, it's advanced analytics are continuing to help retailers navigate a landscape that is still redefining itself by anticipating shopper behavior and managing inventory and supply chain to meet the demand. Retailers who embrace these techniques will continue to outpace those who rely on past approaches based on assumptions over facts.

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