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Analytics in retail
Going to market with a smarter approach

Issues and trends in retail

Few other business sectors are as full of constant change and challenge as retail. An uncertain economy, new forms of digital competition, an increasing number of new product launches, and highly informed, more-demanding consumers are just a few of the industry's challenges. Retailers should consider tapping into the increasingly available amount of data to answer the "crunchy questions" that can hold the key to improving performance in these demanding times.

As the questions become more complicated to answer, retailers require in-depth insights to effectively manage and predict future performance. Oftentimes, the questions are enterprise-wide in nature; traditional siloed analysis is simply not enough: Who are the next 1,000 customers we will lose – and why? Which suppliers are most at risk of going out of business? Which customers are our biggest influencers? Will our workforce profile match our needs in two years? How will demographic shifts affect our market share? Which high-performing associates are we at risk of losing? Retail is an information-driven business. The next generation of business analytics can provide the answers.

A majority of today's analysis is focused on historical data evaluated in hindsight; more recently, analytics are used by specialised resources looking at silos of data to support a specific business function, such as improving allocation, perhaps at the expense of the broader supply chain. Incorporating information from across the enterprise can provide a much deeper understanding of opportunities.

As retailers expand their go-to-market strategies to include multiple channels, and communications with customers expand to include digital advertising, social media, and email, the amount of internal and external data is increasing exponentially. Many retailers are now considering how to manage and leverage unstructured "big" data from social media, third-party sources, and global entities.

Increasingly complex supply and distribution chains, plus constant pressure to contain costs and reduce margins, has driven the need for data analysis to incorporate partners and look at enterprise-wide signals more rigorously than before. Simply put, it is a brand new world, with a brand new set of challenges – and opportunities.

Advanced analytics represent a portfolio of tools, techniques, and organisational capabilities that can be applied to specific decisions across a wide range of business concerns. Below, we highlight six key areas where retailers can apply analytics to drive value for their stakeholders.

Customer engagement

In today's market, retailers must make decisions in the face of intense market pressure. Market factors, such as rapidly changing demographics and an uncertain economic recovery, can present retailers with evolving challenges. Retailers seek to understand which products, services, and offers are most attractive to customers, while customers continue to alter their preferences and shopping behaviors. A dramatic increase in online research, comparison shopping, and bargain hunting has disrupted the traditional customer-engagement paradigm for retailers. Consumers are increasingly in control of how, when, and where they want to interact. Attracting, retaining, and improving the value of customers has become a retail imperative; retailers are recognising that new capabilities are required to capture and apply customer insights.

> Customer analytics and insights must be focused on being both understandable and actionable.

The possibilities for customer insights are myriad, but often the path to actionable customer knowledge seems daunting. In addition to technical or skill barriers, many retailers have cultures that are historically product-centric, as well as merchant organisations whose customer knowledge is intuitively based. Customer analytics and insights must be focused on being both understandable and actionable by key functional stakeholders in the organisation.

While much of customer analytics to date has been focused on better targeting marketing messages to specific segments, real opportunity lies in using customer insights to find sales and margin levers. This can be achievable through some core sets of analyses:

- **Customer engagement assessment:** Applying analytics to determine underserved groups of customers with the likelihood to spend more.
- **Share of wallet**: Identifying the customers with the propensity to increase spending and the corresponding opportunity categories for that spending. Uncovering where share is being lost, to whom, and why.
- **Customer churn prediction**: Building models to identify the customers most likely to attrite and determine the drivers and predictors of attrition to enable preemptive intervention.

Even retailers without highly sophisticated internal capabilities typically have the data to enable these analyses. By understanding which customers represent sales and margin increases (or potential losses) and what changes need to occur, they can make the needed adjustments in assortments, pricing, service behaviors, marketing communications, or other customer experience elements that can potentially produce incremental revenue. These early wins can generate both the "funding" and the organisational "buy-in" to support a retailer's investments and transformation toward becoming truly customer-centric.

Marketing and media resource allocation

The ever-changing consumer also affects the fast-growing and fragmented media space. Consumers' media consumption has shifted, leaving traditional media and communication channels less effective in reaching the broader population. And, while digital and social alternatives are promising their return on investment (ROI), their effectiveness at scale varies widely. With all the media choices now available to the marketer, and more being added almost every day, retailers are looking to advanced analytics to dynamically manage their media options and determine the most effective marketing mix to deploy.

Additionally, media providers are bringing to market far more targeted and localised offerings, allowing marketers to purchase media where and when they need it. This mass localisation of media provides opportunities to increase ROI and to hyper-target customers with the most relevant, cost-effective media (e.g., targeted cable; out-of-home, location-specific advertising; and newspaper subzip zoning) without having to always depend on more expensive and wasteful channels.

Today's analytics can produce simulation and planning tools that help retailers get far more from their marketing spending.

Effectively managing the media takes more than tactical effectiveness and efficiency. Leading marketing analytics look at the interaction among items like the media channel, promoted items, and target segments to understand the most-effective media weight, placement, and flighting. For example, knowing what items are media-responsive – and at what price – and understanding which items drive a better basket, can form the foundation of a more productive media plan. Advanced analytics can deliver insights that inform smart decisions, from determining what mix should be on the front page of the next sales publication to deciding what items should be featured on the homepage. Today's analytics can produce simulation and planning tools that help retailers get far more from their marketing spending – helping plan, anticipate, and course-correct media in a very dynamic market.

Pricing and profitability management

Pricing is a powerful lever for improving both top-and bottom-line financial performance. In a period of declining customer spending and the proliferation of shopping channels, pricing has become a target source for retailers to grow organically. While retailers realise the critical importance of pricing to help drive profitability, identifying the "right" price remains a daunting task. Pricing too high will cost market share and erode customer loyalty, while pricing too low can cost margin and create a price war with the competition. Further complicating matters, pricing requires precision at the most-granular levels – across stores, customer segments, channels – and must account for other key strategic considerations, such as competitive intensity, category roles, brand image, and authority.

Advanced analytics can help retailers improve the way they analyse, set, and deliver pricing in a sustainable and predictable manner. With a broad data set, analytics can allow retailers to derive valuable insights by measuring differences in demand across customer segments, identifying key value items, clustering stores into zones, and assessing shopping behaviour across channels. These findings allow retailers to develop a tactical framework to set price while accounting for distinctions across customers, channels, competitors, and categories.

Guided by a pricing strategy, advanced analytics can also identify unmet customer needs for retailers to profitably fulfill. First, analytics provide retailers the ability to set price points and anticipate the effect to their business by creating granular-level demand models using historical data. Advanced models derive elasticity and cross-elasticity at the store and/or item level, while business rules affirm that pricing remains aligned to category roles, competition, and item-specific relationships, such as size and brand. These, in combination, can allow retailers to optimise their everyday prices to their sales, margin, and volume goals. Second, predictive analytics can enable retailers to set effective promotions; not only the required promotion price, but also identification of promotion products during the right period. With consumers continuing their quest for value and with the expansion of competitive options, setting promotions has become as critical as ever. Finally, analytics are an effective means to increase performance of markdowns. Advanced techniques can facilitate a minimum amount of margin leakage with markdowns by establishing the most-effective discount cadence at the store and/or item level based on inventory and sell-through rates.

Advanced analytics provide the platform to consistently set the "right" price at the right time for the right products across the entire product life cycle; this allows retailers to integrate effective pricing into the daily operation of a retailer's business – not treat it as a one-time event. Our experience indicates pricing solutions can expect an immediate margin performance improvement of 2%–4% and a sales growth of 1%–2%. With the increasing complexity in retail today, applying advanced analytics in pricing can be critical for retailers to stay ahead in the market.

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Supply chain efficiency

Supply chains are also growing in complexity, with an influx of data and a demand for more-responsive relationships with customers who can choose to interact with the business across multiple sales channels. Merchandise assortments are becoming customised and tailored, and operations are expanding globally. As a result, retailers have a tremendous opportunity to leverage analytics to manage inventory, reduce transportation costs, and increase collaboration with customers, merchants, marketing, and suppliers.

Sales and inventory data from multiple source systems can be integrated to identify items at risk of stocking out or of being overstocked. Additionally, predictive analytics can be used to allocate incoming inventory to the highly effective point of demand and to shift excess inventory to alternate locations as needed. Order fill rates and delivery metrics can also be analysed to evaluate and balance working capital and service levels.

Real-time visibility into transportation operations and costs can allow retailers to more effectively manage and streamline this complex and important piece of the supply chain. Opportunities to improve productivity and increase asset utilisation can be identified by analysing carriers, lanes, modes, ship-to locations, contract details, and other key metrics.

The use of analytics in the supply chain is also expanding to include collaborative systems that integrate marketing and merchandising, and more closely connect retailers to their suppliers and distribution partners. This collaboration facilitates required product development, work-in-process, supply and demand synchronisation, and enables opportunities to improve speed to market.

Risk and fraud detection

Fraud is another pressing challenge for retailers, resulting in financial losses, as well as the erosion of customer trust. Fraud can originate with customers, associates, or external sources, such as service providers, and can include shrink, damaged goods, inventory inaccuracies, and a number of other issues. Some instances of fraud include stolen credit card information or fraudulent returns. The retail purchasing department is also a key area for fraud. Retailers should remain alert for expenditures that do not make economic sense, as well as poorly documented expenditures. Retail companies can also lose money if service provider contracts are not monitored.

> To help identify sources of fraud, analytics can be used to analyse unusual patterns.

With so much at stake, companies also need to consider potential risks, such as contractor charges that are not in compliance with contracts, duplicate charges, excessive contractor time charges, or inadequate monitoring of contractor charges.

Fortunately, retail analytics can be applied to detect and prevent fraud and to help manage risk within organisations. To help identify sources of such fraud, analytics can be used to analyse unusual patterns. A combination of statistical techniques can be used to correlate certain types of behaviors. Forensics teams can provide the genetic code of a fraudster and a description of what types of opportunities a fraudster might be looking for. This information, coupled with analytics, can help identify anomalies in the data and pinpoint the area in which there are issues. Some examples include the following:

- Analytics can be used in collaboration with banks and retailers to identify fraudulent activity before it turns material.
- Point-of-service data mining can be analysed in conjunction with other, more-sophisticated data streams to identify losses resulting from process-related errors.
- Types of products can be profiled; stocktake variances, and stocktake adjustments taking place in various subsidiaries can be analysed.
- Analytics can be used with markdown systems, price optimisation systems, business intelligence reporting, and modeling deal prices to help control cash losses.
- Unusual patterns of product and inventory movement can be identified as part of shrink and store associate theft.

Data analysis can also be used to analyse and provide trend data, such as the number of invoices from suppliers over time, unusual invoice number sequencing, and amount spent for goods and services purchased from a particular vendor. This can assist with answering the question, "Does the amount and timing of purchases from a particular vendor make sense?" Furthermore, analysing the actual purchase orders and invoices can assist with answering the question, "Does the price paid for the goods and services make sense?"

Retail fraud is typically prominent in customer returns, associate thefts, and payment mechanisms. By using retail analytics at least in these key areas, retailers can better control losses and remain competitive in a challenging retail environment.

Workforce development and management

Even in an uncertain economy, retailers expect a great deal from their associates – one of their most-valuable resources and the most direct and personal contact with the customer. Retailers can use analytics to increase workforce productivity and use of associates with regard to cost, customer shopping patterns, locations, and associate capabilities and performance. By taking a look at existing data, retailers can manage a significant portion of their budget more strategically, increase productivity and scheduling, and improve recruitment, retention, and development activities.

At the store, workforce analytics can help align associate schedules to store traffic, required tasks, and other variables driving store activity, such as seasonal patterns or special promotions. These applications help improve schedule effectiveness and labour productivity, as well as customer service. The use of analytics helps align the supply of labour and forecasted demand, while taking into consideration the availability and preferences of associates and their individualised abilities and skills.

While retailers have used scheduling applications for years, analytics can allow retailers to schedule their most-productive employees for the time periods when customers are most likely to be visiting the store. These systems can also tie into events, such as scheduled promotions, arriving inventory, and local economic data. Workforce analytics may also be used to correlate the most productive employee and manager attributes to improve performance and productivity.

Beyond store scheduling and productivity, the incorporation of broader workforce analytics into the overall business strategy can help enable an effective and sustainable retail workforce. However, having the right tools and point solutions to guide the workforce strategy can enable a quicker, smarter transformation that can drive bottom-line results while solving a multitude of key human resource business challenges. Because retail industries employ a high number of customer-facing associates, it is imperative decisions pertaining to hiring and retention are precise and supported by data-driven insights. The following are examples of workforce analytics solutions that can be used to assist with proper resource allocation when building a high profit-yielding workforce:

- **Recruitment analytics:** Uses an advanced scoring model to objectively rate candidates based on desired attributes. In an industry where turnover rates and training costs are significant, committing to candidates with a greater likelihood of high performance and tenure can be most significant in reducing hiring costs and improving customer service.

- **Retention risk analytics:** Leverages both internal employee and external data sources to predict the likelihood of which employees – and more importantly, why these employees – are likely to leave, months before the occurrence. This solution can enable a proactive retention strategy by understanding the key risk factors that drive attrition in the critical workforce and preemptively mitigate these risks.

- **Workforce safety analytics:** Analyses and detects the underlying causes and contributing factors to workplace accidents. By understanding the factors that contribute to workplace accidents, businesses can improve their safety response process and add foresight to prospectively prevent workplace accidents, thereby containing costs and promoting sustainability.

Using these workforce analytics solutions, retailers can match their employee resources with demand, potentially resulting in increased sales, higher productivity, improved customer service, minimised overtime costs, fewer labour law violations, and improved profitability.

For more information please contact

Howard da Silva
Partner, Consumer Business Leader Switzerland
Deloitte AG
hdasilva@deloitte.ch
+41 58 279 62 05

J.N. Hill
Partner
Deloitte Consulting SA
jnhill@deloitte.ch
+41 58 279 81 49

Anthony Walsh
Director
Deloitte SA
anthonywalsh@deloitte.ch
+41 58 279 82 76

Chris Phillips
Partner
Deloitte AG
chrphillips@deloitte.ch
+41 58 279 61 73

Daniel Schlegel
Partner
Deloitte Consulting AG
daschlegel@deloitte.ch
+41 58 279 67 70

Chris Shuttleworth
Director
Deloitte SA
chrshuttleworth@deloitte.ch
+41 58 279 82 51

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