Creative Ways Retail Business Intelligence Delivers Value to Customers

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It may surprise you to know that retail is one of the most data-driven industries out there. While tech companies may get all the press for leveraging data — for better or worse — it's retail that's putting customer data to use to create dynamic experiences and pivot more quickly in a post-pandemic world.

Blurring the lines of physical store locations and online through the intelligent edge

The edge isn't a new technology. Many point-of-sale systems already function somewhat like edge applications at physical stores. But as companies seek competitive differentiation, they're pushing the boundaries of what the intelligent edge can do.

For example, during the height of the pandemic, stores such as Target accelerated buy online/pick up in-store options to accommodate stay-at-home orders. They leveraged existing store space, converting it to a micro-fulfillment center and enabled smart tagging, robotics, and smart storage to make it easier than ever for a reduced number of store associates to handle increased order volume.

In another example, Amazon reimagined the in-store checkout process — something long thought a necessary evil for brick-and-mortar retail. Instead, the company uses "Just Walk Out" technology, a series of pressure-sensitive shelves and overhead cameras to determine items in their cart. Customers set up this option when entering, using either an Amazon app QR code, inserting a debit or credit card, or scanning a palm. When ready, customers simply leave the store, and sensors detect and bill them for items.

These types of intelligent edge applications require enormous data processing. Stores could have a dozen edge applications running at any given time with different stacks and infrastructure across the whole company. They'll need an operational layer that enables communication between applications to maximize the edge to its fullest potential.

Real-time data sharing creates dynamic shopping experiences

Several luxury brands (see examples here and here) have made headlines leveraging augmented and virtual reality to bring technological experiences to their physical stores. Real-time data makes tech-enabled stores possible. Customers can try on clothing, view accessories in AR, receive recommendations based on their previous shopping history, and can scan products to receive more information.

These experiences mimic the ones consumers get online. Despite the significant competitive differentiation, businesses can face steep developmental challenges. Complexity and a lack of expertise in real-time systems can prevent companies from implementing connected shopping experiences.

A data operating system simplifies data handling and incorporates tools that allow departments to build the data products they need. Low-code and no-code choices give organizations the freedom to build, but they require an efficient way to integrate them into the overall stack. A data operating system is the answer.

The retail back office also gets an upgrade — and passes that value to customers

Revitalized business intelligence isn't only about customer-facing applications. It's also about reducing the friction and challenges of retail operations — allowing companies to pass cost savings and time value on to their customers.

These are some of the more exciting back-office use cases:

- **Managing loss-prevention**: Retail shrinkage is a significant challenge. Retailers know they're losing a percentage of inventory through accidental and intentional means, but it's only now that real-time business intelligence can offer a solution. Integrating point-of-sale data with other measures such as computer vision can alert companies much faster to inventory discrepancies.
- **Automating supply chain documentation**: Supply chain hiccups have also caused a few big headlines in recent years. With data sharing between supply chain partners and automated documentation, companies can better predict outages and delays and offer customers more accurate estimates of inventory availability.
- **Demand forecasting**: Supply chain challenges can make demand a tricky subject. With dynamic, real-time data, companies can predict inventory demand even when those predictions are affected by seasonal or other irregular factors.
- **Dynamic pricing**: Rather than relying on static rules driven by a limited amount of data input, competitive retailers understand that pricing should reflect real-time, changing market factors. Harnessing big data — literally hundreds of millions of data points — allows retailers to leverage dynamic pricing to retain a competitive edge in an increasingly noisy online world.
- **Efficient inventory management**: If out-of-stock inventory during high demand is bad, holding on needlessly to excess inventory for months or years is worse. Business intelligence and big data can make it easier for retailers to buy the correct amount of inventory, move it efficiently, and put it into the hands of customers without needing to sell at a loss.

Retail business intelligence is driving value like never before

Retailers leveraging data to its highest potential can reduce risk and inefficiencies that affect their bottom lines. These applications are helping retailers transform operations and bring what were once unavoidable inefficiencies into alignment with business goals. Customers benefit whether they consume new customer-facing technologies or reap the value from better operational ones.

DataOS offers the only data operating system on the market that retailers can use to drive data insight, wrangle manual tasks, and enable data access for all. It unifies data even across distributed systems and could be a powerful addition to a tech stack—without moving data or having to replace legacy systems.

About DataOS →

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