The Power of Data in Retail
Navigating the challenges and opportunities of modernizing retail operations
The State of Retail

The retail industry is undergoing a profound digital transformation. At the National Retail Federation (NRF) 2020 Big Show, retailers discussed how data is crucial to customer satisfaction. They’re looking to use data to respond to changing shopping habits and consumer tastes, creating an intelligent supply chain. But with new opportunities come new challenges.

The retail industry is healthy and has been growing at 4% annually since 2010. However, retailers being disrupted by this digital evolution have been forced to close underperforming stores with some even filing for bankruptcy. The reasons? There are many, but one common theme is that the brands were losing touch with their customers and did not pivot to the new era of retail. Consumer expectations around commerce will continue to be heavily influenced by digital experiences in their day-to-day life.

Many of these companies failed to apply data-driven insights.

Customers expect:
- A strong online presence
- Inventory management and transparency
- The right product mix
- An improved digital customer experience

Companies like Amazon, Sephora and Nordstrom have found ways to meet customer needs while expanding their retail landscape. They build brand loyalty through frictionless, personalized experiences driven by the use of advanced technologies. These retailers consistently mine the data they collect and transform their operations to adapt to the future needs of digital, IT, supply chain, marketing, merchandising and store operations teams.

To stay relevant, retailers need to effectively address the blurred line between online and offline. Online retailers such as Amazon, have started opening physical stores and applying their advanced online data mining capabilities to the brick-and-mortar environment — where more than 90% of purchases are still made. Physical store strategies continue to evolve as well with powerful uses of data from video cameras, Wi-Fi and Bluetooth devices, point-of-sale systems, workforce management systems, marketing campaigns, weather and other sources. Bringing this data together can inform retailers about how customers engage with products and associates in their stores, allowing retailers to identify and measure opportunities for growth.

Most retailers are implementing omnichannel strategies to meet customers on the channels where they are shopping and buying. The goal is to get all channels working in harmony to:
- Nurture more sales and engagement
- Enable retailers to promote offers based on location data to in-store customers on their mobile devices
- Give shoppers the option to buy online and get delivery or pick up products at a store of their choice

This guide examines the trends shaping the retail industry, eCommerce and in-store infrastructure challenges, and data utilization strategies to ensure your digital transformation meets both business and customers demands.
Technology Opportunities in Retail

The best omnichannel strategy enables retailers to provide their customers with digital experiences that blend the benefits of online, in-store and mobile into a single frictionless customer experience.

Voice interfaces like Alexa provide consumers with an intuitive way to engage digital technology. The growing popularity of new interfaces and connected devices in the home are having a profound impact on how consumers shop.

Advancements in augmented reality (AR) promise innovative retailers new ways for customers to experience products, like visualizing how a product would look in their home or even on their body. According to BRP's 2018 Digital Commerce Survey, retailers understand the impact that AR can have on the customer experience, and 32% of retailers plan to use AR within three years. Many retailers have already introduced AR apps, and testing and deployment of VR apps is increasing. Macy's is currently rolling out a new virtual reality (VR) experience for home use that allows users to virtually place furniture into photos of their homes, testing how the pieces fit with their current interiors. In pilot stores, the company found that VR furniture experiences have increased the overall basket size by more than 60% versus non-VR furniture sales. In stores, Macy’s debuted virtual mirror kiosks that allow shoppers to digitally try on more than 250 trending beauty products.

The focus on the Internet of Things (IoT) in retail has changed significantly over the last couple of decades. Early IoT use cases included supply chain and operational efficiencies for inventory visibility and accuracy. Now, retailers want IoT to deliver meaningful ways to interact digitally with consumers in stores. According to PwC’s 2019 Internet of Things Survey, retailers are moving ahead to reap IoT benefits, evaluating how they can incorporate this technology into various aspects of their business. Through an understanding of how shoppers move around stores, interact with merchandise and more, retailers can optimize store layouts, fixtures, staffing and even product offerings. Retailers can also measure the effectiveness of marketing and merchandising strategies — testing new store concepts before committing to a full roll-out.

Forward-thinking retailers gather and combine data from all their channels to better understand consumer sentiment and behavior, boosting customer loyalty. Data analytics optimizes everything, from the supply chain to the post-purchase stage of the buyer’s journey.

Every Retailer Has a Universe of Real-time Data
eCommerce and In-Store Infrastructure Challenges

Delivering a cohesive customer experience, regardless of touchpoint or channel, is still a monumental effort for retailers. Just one minor performance glitch and transactions can come to a stop or digital platform performance can be negatively impacted, resulting in lost sales and a poor customer experience. Not to mention that as digital sales become a bigger part of overall sales, retailers will increasingly use traffic growth and website performance as a gauge of success.

The Impact of Downtime

There are many different touchpoints in a customer’s experience with a retailer, but it often starts or ends with a retailer’s digital channel. Whether that customer is online to view a promotion, shop for ideas, place an order, or check the status of an order, high availability is critical as this experience is a make-or-break moment. Customers expect digital interactions to just work. For any retailer that does substantial business online, any loss of network service means that customers won’t be able to find products or services and purchase them — and they’ll surely move on. If the business model relies on network availability to deliver a service, any downtime to a website could make it impossible to connect with existing customers as well.

Every one second of downtime directly translates to lost revenue, especially during the busiest time of the year. Research has shown that 47% of online customers expect a website to load in less than 2 seconds, and 40% will go to another site after 3 seconds, with more shoppers following with every passing second. The lost time and money associated with downtime cause far more than inconvenience.

A June 2019 Retail Systems Research report, sponsored by Google, informed the impact a slow or unavailable website can have on customer loyalty: 91% of respondents said they had left a website because it was too slow, and 30% of shoppers said they would think twice before using that retailer again.

Additionally, downtime threatens in-store operations as much as online operations. From point-of-sale to vendor systems, facilities management, replenishment, mobile devices and Wi-Fi, IoT sensors, kiosks, and more, these connected systems and applications are essential to the level of service and the quality of seamless retail experiences that customers come to expect in person. Disruption to any of the digital services will likely cause customers to move on without making their purchase and question whether or not to return in the future.

Consumer response to slow or unavailable website*

- Leave and Google products for alternative sources: 45%
- Forget about it: 38%
- Leave and buy from a similar retailer: 37%
- Leave and go to Amazon or Alibaba to find what I’m looking for: 33%
- Post on social media: 11%
- Never come back to site: 10%
- Complain to retailer: 8%

* Respondents were asked to select all that applied. Source: RSR Research 2019
Mounting Retail Security Threats
Retail security threats have become all too common. POS system hacks, payment card skimmers, eCommerce fraud, and denial-of-service attacks have historically been among the most problematic security issues for retailers — and will continue being so with the growing reliance on technology.

IoT Vulnerabilities
To stay competitive, retailers with physical stores are embracing all forms of digital technologies that require a robust edge infrastructure to turn shoppers into customers. Beacons, smart mirrors, IoT shelves and lighting, digital signage, self-checkout, AR, VR and virtual dressing rooms help to optimize the in-store experience, improving merchandise tracking and enhancing loss prevention.

However, all of these new connected devices represent many possible points of entry for cyber criminals, not to mention introduces complexity that makes it challenging to fully comprehend IT environments.

Supply Chain Attacks
Retail operations, whether in-store or online, rely on a long chain of connections between third parties. The increasing connectivity between a retailer and its many third-party connections can wreak havoc up and down the supply chain when attackers target one of the third parties. The 2014 attack on US retailer Target is one of the most notable cases of a successful cyberattack on a retailer — attackers exploited poor security in an HVAC vendor to compromise Target’s payment systems and steal payment details of some 40 million customers. Another example includes a series of distributed-denial-of-services (DDoS) attacks in October 2016 that were aimed at a major DNS provider affected sites such as Amazon.com and Ovestock.com, resulting in downtime and an unknown amount of lost revenue.

Retail Store Crimes
Internal theft, shoplifting, fraud and organized retail crime (ORC) remains a serious problem facing superstores, retail chains and grocery stores. According to the National Retail Federation (NRF) and its loss prevention community, ORC costs the retail industry approximately $30 billion each year. More importantly, retail crime puts shoppers and employees in danger.

Retail-theft losses are nothing new, but the problem continues to grow, and some of that growth may be directly connected to retailers’ efforts at digital transformation. The National Retail Federations’ 2018 Organized Retail Crime survey suggests that return fraud has continued to grow as some retailers have broadened their policies to allow items that were bought online to be returned in-store. Specifically, 38% of those surveyed said the number of online purchases returned to brick-and-mortar locations had increased, and 29% said a growing number of those returns were fraudulent.

Challenge of the Cloud
Many retailers now run the majority of their operations through public cloud services like Amazon Web Services, Microsoft Azure, Google Cloud Platform, Salesforce and others. While public clouds simplify infrastructure for retailers, it can also complicate the IT and security infrastructures management. It makes it so IT and security professionals have to manage data from both cloud servers and on-premises systems.

Handling this complexity, especially during a peak time like the holiday season or special shopping events requires an end-to-end data platform that can easily integrate data from multiple sources, regardless of structure — allowing for engagement with the right responders on performance and security issues in real time.
How Data Is Providing Operational and Security Benefits to Retailers

Fortunately, data can help with all the above challenges when harnessed and applied the right way.

**Data Improves PCI DSS and GDPR Compliance**
Retailers must be on top of their PCI compliance to reduce the risk of debit and credit card data loss. For those doing business in the EU, GDPR should also be top of mind. With the ability to continuously monitor, investigate, analyze and act on all relevant compliance requirements, retailers can have efficient workflows for audit trails and incident reviews, and report on overall effectiveness and status of PCI technical controls. Additionally, retailers can meet requirements across environments much faster.

**Data Optimizes Store Operations**
Collecting, combining, and analyzing vast new data sets from POS systems, associate devices, mobile applications, store facilities, guest Wi-Fi networks and IoT, retailers can minimize downtime at stores and avoid expensive service calls.

**Data Informs Fraud**
Traditional fraud prevention techniques tend to be historical rather than predictive. By monitoring and analyzing data from daily transactions and activities such as purchasing, accounts payable, POS, sales projections, warehouse movements, employee shift records, returns and store-level video and audio recordings across the enterprise, retailers can pinpoint fraudulent activities and develop appropriate priorities for investigation and remediation. Technologies like machine learning and behavioral analytics can also be applied to detect potentially fraudulent transactions based upon behavior, such as large gift-card purchases or numerous transactions that fall just below a verification threshold.

**Data Predicts Website Error Trends**
To prevent your customers from experiencing poor performance online, data can be used to monitor and analyze application performance as well as the throughput of the underlying infrastructure. All of that information can be gleaned from mining data in load-balancing and network elements, web servers, application servers, legacy systems, databases, messaging applications, security products, virtual machines, containers and storage devices. Leading IT organizations are leveraging machine learning to proactively identify error issues before outages occur.

**Data Increases Application Reliability**
Whether CIOs have fully embraced cloud or have existing applications in the data center, the retail industry continues to move towards complex, microservices-based architectures that have lots of moving parts. These parts sometimes fail at an alarming rate, introducing unique challenges to IT professionals and developers tasked with ensuring high availability and seamless operations. Data from logs, metrics or tracing can be used to monitor and observe applications in cloud, on-premises or hybrid environments.
Get Started

on your data strategies today and ensure your retail evolution meets demands both internally and with your customers.

To learn more about how Splunk, the Data-to-Everything Platform can help you, visit our site.