Drive Retail Transformation With Redis Enterprise

Many brick-and-mortar retailers are struggling as stores become less profitable and online competitors lure away customers—but technology can help change the equation.

Introduction

Around 10,000 U.S. retail stores closed in 2019, victims of a shift to online shopping that has accelerated in recent years. And due to the COVID-19 crisis, another 25,000 are predicted to shutter in 2020. Many retailers and chains of all sizes are still unprepared for these sea changes, and could face bankruptcy. Those that try to compete online find a challenging marketplace with online-first retailers establishing big leads in critical areas like speed of selection, a digitally enabled supply chain, broad product catalogs, availability, and customer experience and personalization.

Online retailers are simplifying the shopping experience for their customers and building loyalty. As more customers shop online, foot traffic decreases and even more stores close, which drives frustrated customers online, and so on. But this vicious cycle can be broken. Brick-and-mortar retailers can compete by leveraging the right technology both online and in-store (where many customers still prefer to shop).

To help your retail business compete, you need to modernize your IT infrastructure to embrace the cloud, speed transactions to deliver a great customer experience, and take an omnichannel approach to retailing that combines the power of online with in-store shopping and fulfillment.

This whitepaper will offer three recommendations on how to leverage the data layer in your technology stack to help build modern real-time omnichannel applications in the cloud and let your retail business stand out from the crowd.

Let's take a closer look:

25,000

U.S. retail stores predicted to close in 2020



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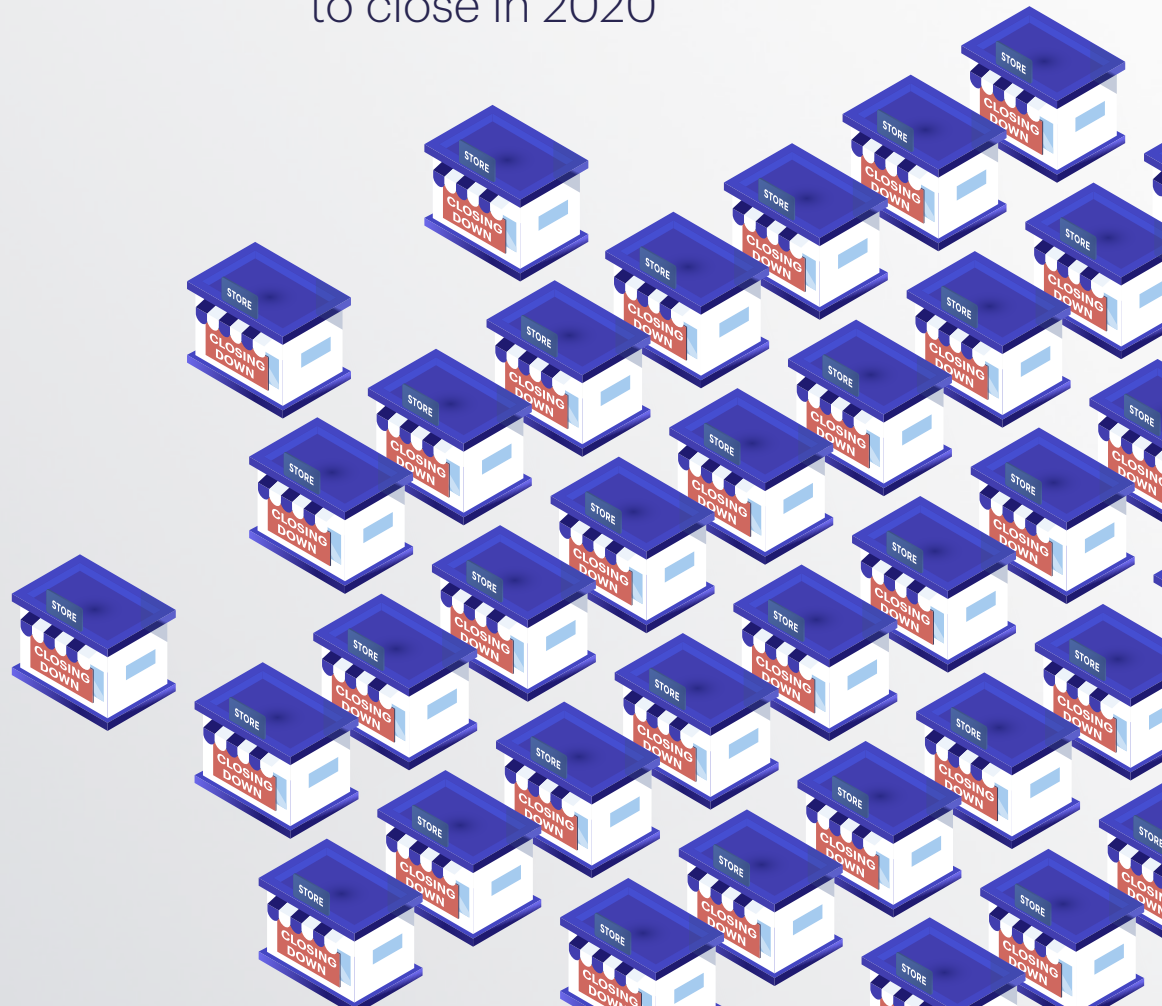
Unify the cloud data layer

Ironically enough, many physical retailers have now been offering online shopping for so long that they are now being held back by their legacy in-house technology. Many of their online stores were built 20 years ago with now-aging technology and infrastructure that is more costly to manage and throttle innovation compared to more modern digital-first competitors.

Increasingly, the answer is to move to the cloud. Cloud-native apps are faster and more responsive than ever, which is essential for today's consumers, who expect everything from catalog searches to customer-service interactions to happen quickly and efficiently.

This is where Redis Enterprise can help. A data layer built for modern applications, Redis Enterprise provides the speed and cloud-native reliability retailers need. Its multi-tenant architecture allows companies to develop, test, and launch applications and microservices rapidly, without having to set up a new physical infrastructure for each one. This can even be achieved across geographies with Redis Enterprise's Active-Active geo-distribution, which enables conflict-free, simultaneous read-and-write operations to one dataset across multiple regions, once again ensuring speed in a challenging environment. And with Redis Enterprise, running on-premises, in a hybrid cloud, or in a multi-cloud environment couldn't be easier.

An added benefit is that the cloud can also cut costs. For many services, cloud computing vendors charge only for what you use, so retailers don't have to pay year-round for capacity that they need only on Black Friday. Redis Enterprise's linear scalability makes it easy to elastically adjust capacity to meet variable demand, both planned and unexpected.

Of course, simply moving to the cloud isn't enough. Your cloud-based offerings need to meet customer-experience expectations.
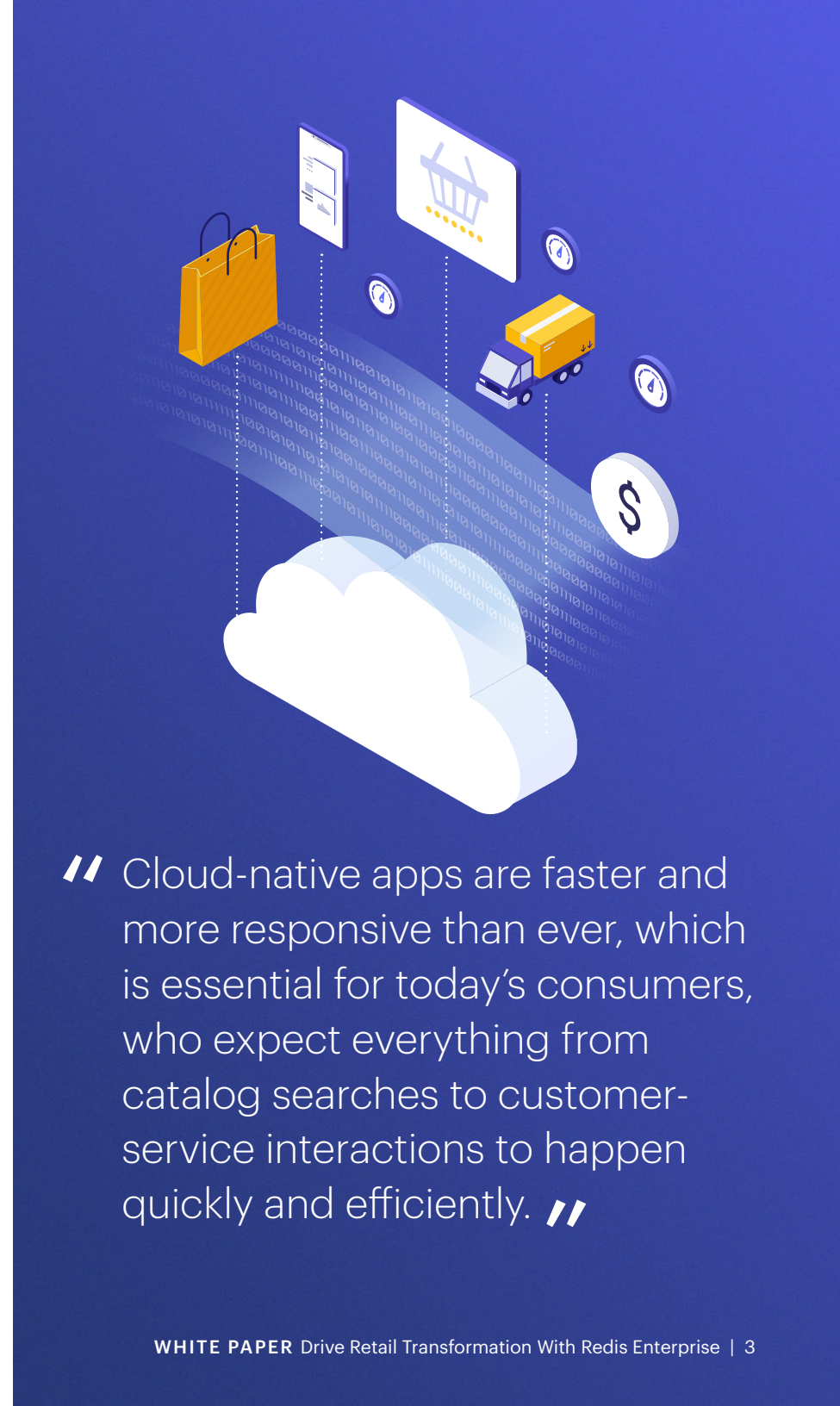
" Cloud-native apps are faster and more responsive than ever, which is essential for today's consumers, who expect everything from catalog searches to customer-service interactions to happen quickly and efficiently. **"**

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Building real-time applications

When innovative sock retailer Stance releases a new limited-edition product, huge numbers of people rush to the company's website in a race to purchase before the items are sold out. Supporting the high-speed transactions these customers expect is not simple. The application must find the relevant product information, determine that the transaction is real and not fraudulent, and then approve payment. And it all has to happen fast: a one-second delay in response time can cut conversions by 7% and customer satisfaction by 16%.

Stance needed a website that could handle those peaks, and a database that would reduce application latencies while consuming fewer internal IT resources. Redis Enterprise improves response time by removing the need to retrieve frequently used data from a primary database held on a slower persistent-storage device attached to the network. For Stance, Redis stores snapshots of its 3,000 SKUs in memory, which provides a near-instant response for shoppers browsing the website.

Building expertise in managing auto-scaling with zero downtime can be expensive in terms of people and time. Stance was able to better manage operational costs by using Redis Enterprise Cloud as a fully managed service and offloading these efforts to Redis experts. Additionally, Redis Enterprise's cloud-agnostic approach was a huge benefit to Stance, since the company was moving from Amazon Web Services to Google Cloud.

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The importance of session state and scalability

Session management is also critical to retailers. Session state is information about each user's interaction with the application while they're using it, such as what they've searched for, what items they've put in their shopping cart, and so on. To maintain session state, the application needs to frequently read and write necessary information without impacting the end-user experience. The speed of each operation is important, and there's no room for data loss. Users don't want to see their shopping cart lose items, for example, or have the checkout process "forget" the shipping address they just entered.

Redis Enterprise's low-latency read and write operations, coupled with multiple data persistence options, are essential to maintaining session state, while its high availability and multiple data models enable use cases such as dynamic pricing, catalog recommendation, and targeted advertisements.

As the leader in NoSQL databases, Redis Enterprise customers can leverage purpose-built modules (RedisAI, RedisGraph, RediSearch, etc.), multi-cloud and hybrid-cloud deployment options, local latency for both read and write operations with CRDTs based Active-Active deployments, and unmatched performance (with sub-millisecond latency) to reduce the need for speciality databases to unify the data layer.

Finally, scalability also matters to retailers. Even in tough economic times, growth happens. That's a good thing, but as the number of your end users and volume of data grows, your traditional data layer may struggle to provide a consistent, reliable customer experience. Redis Enterprise's linear scalability means that retailers can handle growth by adding resources (nodes and shards) that directly correlate to the increased throughput—all without having to shut down the application.

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Optimize the digital supply chain

Physical retailers can gain an advantage over their online-only rivals by using their store networks to deliver an omnichannel experience. The goal is to create a great omnichannel shopping experience that combines both digital and physical points of contact with perks like in-store pickup (which can add convenience and avoid delivery fees), searching for items by location, and shipping to and from stores. In addition, insights from digital sales can be used to tailor the in-store customer experience to create a synergy that can't be replicated by online-only retailers.

However, this can't be done without a real-time view of inventory. The retailer needs to know if the item is available at a local store and, if not, when it can be sent there. This can be leveraged further using predictive data analytics to send the appropriate stock to stores even before it is needed.

Clothing retailer Gap Inc., which operates more than 3,000 stores and 9 international distribution centers to serve more than 3 million customers, turned to Redis Enterprise when it wanted to modernize its inventory applications. The company's previous inventory platform, backed by a relational database, could only run its order fulfillment algorithms asynchronously. Redis Enterprise's RediSearch module provided Gap with incredibly fast search queries and secondary indexing, resulting in a query response rate that was more than 100 times faster than before.

Similarly, Dicks Sporting Goods has credited Redis with helping the chain quickly transition to curb-side delivery. This capability became critical during the COVID-19 pandemic, with retailers around the globe scrambling to be able offer accelerated delivery and pick-up options. The difference between two-day and same-day fulfillment, for example, could be the difference between success and failure for highly competitive—and highly stressed—retail operations.

Conclusion

The challenges facing the retail sector are not trivial, but there are strategies for improving the situation. Leveraging a modern cloud platform now represents "table stakes" for retailers looking to compete with online retail disruptors, while high-speed transactions are essential to deliver the kind of experience modern customers now demand. Redis Enterprise's fast performance, low latency, high availability, linear scalability, and multiple data-persistence options provide a strong data foundation for real-time omnichannel operations that can help retailers establish a competitive advantage and give their physical stores renewed life.

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To learn more about how retailers can transform their customer journeys with Redis Enterprise, visit:

redis.com/retail

Or check out our case studies to see how major retailers like Gap and Stance are already using Redis Enterprise.

To get started, try Redis Enterprise in the cloud, or download Redis Enterprise Software for a free trial now.

redis.com/try-free

About Redis

Modern businesses depend on the power of real-time data. With Redis, organizations deliver instant experiences in a highly reliable and scalable manner.

Redis is the world's most popular in-memory database, and commercial provider of Redis Enterprise, which delivers superior performance, matchless reliability, and unparalleled flexibility for personalization, machine learning, IoT, search, e-commerce, social, and metering solutions worldwide.

Redis, consistently ranked as a leader in top analyst reports on NoSQL, in-memory databases, operational databases, and database-as-a-service (DBaaS), is trusted by more than 7,400 enterprise customers, including five Fortune 10 companies, three of the four credit card issuers, three of the top five communication companies, three of the top five healthcare companies, six of the top eight technology companies, and four of the top seven retailers.

Redis Enterprise, available as a service in public and private clouds, as downloadable software, in containers, and for hybrid cloud/on-premises deployments, powers popular Redis use cases such as high-speed transactions, job and queue management, user session stores, real time data ingest, notifications, content caching, and time-series data.

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