



7 Steps

to Make the Performance of Your
eCommerce Application a Competitive
Advantage in the 2020 Holiday Season

Continuous Performance Testing for Retail
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The first half of 2020 didn't go as planned for any business. No industry was spared the fallout from the COVID-19 pandemic, and retail was no exception. Seemingly overnight, most shopping shifted from a mix of in-store and online to eCommerce only and/or BOPUS (buy online and pickup in store). Out of sheer necessity, consumers pivoted quickly to adopt new digital-first shopping behaviors — which will persist through the holiday shopping season.

In fact, 2020 will be the biggest online shopping holiday season in history. And the most unpredictable. While most surveys and forecasts anticipate overall holiday spending to be the same as or less than in 2019, online shopping will claim a bigger piece of the pie. Salesforce research shows that after restrictions started to loosen up, 62% of U.S. shoppers still conduct less in-store shopping than before the pandemic.¹

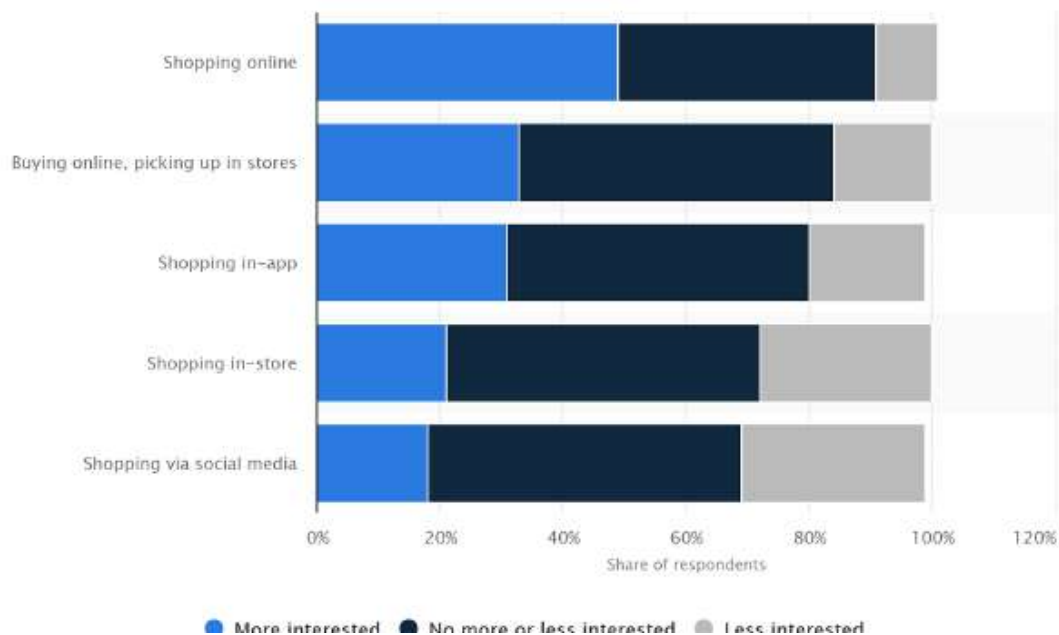
“2020 will be the biggest online shopping holiday season in history.”

Simply put, less in-store traffic = more online traffic. Online retail success is all about making customers' digital experience faster, easier and better than the competition. According to a PricewaterhouseCoopers study, almost one-third of consumers stop doing business with a brand they love after only one bad experience.²

Performance testing in preparation for the 2020 holiday season is more important than ever. Going into the busy season with confidence that your eCommerce can handle whatever is thrown at it is not just about mitigating risk, it's about seizing opportunity.

U.S. COVID-19 impact on holiday shopping methods 2020

Compared to last year, how interested are you in shopping for the holidays in the following ways?



source : [Statistica](#)

Performance matters – a lot

Online retail has become the fastest-moving, most highly competitive industry out there. Winners can become losers almost overnight. Customers today expect and demand outstanding performance from an eCommerce site. They want instant gratification on any device, anytime, anywhere. If they don't get it, they'll bounce. After all, the competition is only a click away.

Digital performance boils down to two things: speed and reliability. It's proven that making pages faster improves conversions and boosts sales. For example, Staples.com saw a 10% improvement in conversions simply by shaving one second from its median load time. And outages during the holiday season are huge, lost opportunities: Costco's 2019 Black Friday outage cost them \$11 million.

But it's not only about lost revenue then and there. Slow performance has a residual negative impact — even greater than an outage. Akamai research found sites that went down experienced an average permanent abandonment rate of 9%, but sites that suffered from slow performance experienced a 28% permanent abandonment rate.³

Here are seven practical performance testing considerations to help make sure your website is ready for the 2020 holiday online shopping bonanza and help you avoid snatching defeat from the jaws of victory.

1. Prepare for unprecedented volume of traffic

It's every retailer's nightmare: you drive tons of customers to your website, only to have it crash under the heavy load. The lost revenue alone during downtime is enormous (Costco's 2019 Black Friday outage cost them \$11 million), not to mention the hit to brand reputation and customer dissatisfaction.

What's more likely is that your website will slow down under heavy traffic. But slow is the new downtime — over half of visitors abandon a website that takes longer than three seconds to load, and 80% of them will never come back.

Anticipate that the volume of traffic in 2020 will be beyond anything you've ever seen before. Load testing for an extreme number of concurrent users is crucial. Extrapolating from your 2019 online holiday traffic numbers leaves a lot of room for error. Conventional wisdom has held that you should test for 2–3X your previous peak load, but even that may not be enough this year. Adobe Analytics' recent Digital Economy Index report found that U.S. shoppers spent more online during the early part of COVID-19 (April-May 2020) than during last year's entire holiday season (November-December 2019).⁴

2. Anticipate sudden bursts and spikes

Traffic levels can swing wildly throughout the day, so be sure your website can handle intense bursts of activity. A competitor website may have crashed or become bogged down, sending more shoppers your way, or a killer promotion may suddenly hit tens of thousands of digital eyeballs.

Given the economic uncertainty of millions of unemployed workers, it's likely that we'll see increased activity surrounding discounts. This could cause the digital equivalent of in-store Black Friday scenes when the clock strikes midnight, with shoppers potentially storming your website in a rush. For example, the four hours of 7–11PM on Cyber Monday sees more sales than any other full day of the year.

3. Test, remediate and retest in real time

The concept of freezing your eCommerce environment in October in order to prepare for the holiday season has become a quaint relic of the past. The competitive pressures and speed of business today demand that you continuously innovate and introduce new services — or your competitors will. Staying the same translates to falling behind.

But performance testing an eCommerce environment is like peeling an onion. No sooner have you identified, pinpointed and resolved one performance bottleneck than another one underneath rears its head. Developers need actionable insight to address performance issues immediately in the here-and-now, not days or weeks down the road. Developers should be able to see actual test results in real time — either while the test is being executed or immediately following.

4. Think mobile, mobile, mobile

You'd think that with everybody spending more time at home, there would have been a shift away from mobile to desktop during the lockdowns. But in fact, the percentage of online sales from mobile devices actually increased during the pandemic. Mobile remains king of online shopping and is set to overtake every other channel at the #1 source of all sales.

The big challenge with mobile testing is replicating realistic conditions of how real users access your eCommerce. The sheer

enormity of variables — over 9,000 distinct devices with different screen sizes, resolutions and hardware configurations; hundreds of versions of operating systems; an ever-growing number of network providers; different connectivity levels (4G, 5G, LTE); different geographical locations around the globe — is mind-boggling.

You don't need or want to test performance for every conceivable combination, but do bear in mind that mobile is where most of your traffic (and sales) will come from.

5. Scalability isn't free

Leveraging cloud resources to scale up as demand increases is a must for online retailers. But the price tag for such dynamic capacity can be hefty if you don't test performance.

First, be aware that simply throwing more capacity at traffic spikes may be camouflaging underlying problems — applying expensive Band-Aids to buggy applications. Ensure that your applications are optimized for performance so that you aren't overspending on cloud costs. In other words, make sure that scale doesn't replace performant code.

Second, not all cloud providers are equal in terms of performance, scalability and reliability. Make sure you're getting the best bang for your buck from a particular cloud vendor. You probably have adopted a multi-cloud strategy so that you're nimble enough to change cloud providers when and if it makes sense. Your performance testing results should be able to provide actionable insights on all layers of cloud services — from infrastructure to application — to continuously evaluate whether cloud KPIs are meeting performance SLOs.

6. Your application is only as fast as its slowest component

Every online shopping ecosystem is a complex web of interdependent components — Dynatrace research has found that every customer transaction hits at least 82 different technologies, customized API services, plugins and third-party integrations. Any one of which could become a single point of failure, create a bottleneck or degrade customer experience. ⁵

It's important to test not only how the components perform individually but also how they perform collectively as a whole. It doesn't matter if 90% of a customer's experience is great; that 10% where she encounters slow or buggy performance is enough to lose the sale. Pay special attention to checkout — this is

where customers are most impatient and most likely to abandon the transaction.

Trickier, but just as important: evaluate the impact of third-party services — payment gateways, shipping integrations, reviews, search, personalization, social plug-ins, etc. — on performance. Bear in mind that the peak holiday shopping season is also the busy season for third-party services. They're not only getting higher traffic from your site, they're inundated with requests from other websites too. Your performance testing solution should enable you to drill down and understand how third-party services impact performance.

7. Don't forget the backend

Test the performance of all your backend interconnections and integrations. Be sure that solutions integral to your eCommerce — ERP and CRM systems (SAP, Oracle, Salesforce, Pega), order management systems (OMS), product information systems (PIM), shipping/logistics, etc. — can handle peak traffic loads. While the customer-facing frontend may see upwards of 3X more traffic than usual, backend system loads experience a 10X increase. Keep in mind that many APIs have rate limits and if these limits are exceeded, you're headed for a crash.

Conclusion

The holiday shopping season is often make-or-break for retailers — accounting for 20–30% of their annual revenue. The coronavirus pandemic has shifted consumer buying behavior away from brick-and-mortar stores and toward web and mobile. This year, we can expect a greater volume, velocity and variety of shopping to be online. The 2020 holiday season is shaping up to be the biggest wave of online shopping ever.

This presents a golden opportunity for retailers who ensure an outstanding digital experience. Customer experience has become the new battlefield for the hearts and minds – and share of wallet – of shoppers. The bad news: Even if you provide a positive experience 9 out of 10 times, that one time you don't could be the last. The good news: Deloitte research shows that almost 80% of consumers are open to trying a new retailer.⁶

Many factors contribute to a positive digital experience in retail, but first and foremost it's about customers being able to buy stuff quickly and without hiccups – anytime, anywhere, on any device.

Performance testing ensures the speed, scalability and stability of your eCommerce system. If you want to be one of the winners in the “new normal” holiday shopping season, prepare for traffic like you've never seen before and test the performance of your eCommerce system under the most extreme conditions.

¹ [Salesforce.com](https://www.salesforce.com) ² [PwC](https://www.pwc.com) ³ [Akamai](https://www.akamai.com) ⁴ [Adobe Analytics](https://www.adobe.com/analytics) ⁵ [Dynatrace](https://www.dynatrace.com) ⁶ [Deloitte](https://www.deloitte.com)

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About Neotys

Neotys has 15 years of development investment into NeoLoad – the performance testing platform designed to accelerate Agile and DevOps processes. It's built by engineers who recognized that to achieve their Agile adoption objective, they needed to create a product that could facilitate superior load and performance testing continuously. The result – up to 10x faster test creation and maintenance with NeoLoad. We genuinely believe that the performance engineer can become the critical application performance partner providing the best testing coverage while respecting the cadence of the Continuous Delivery process. As performance becomes the responsibility of the wider team, the continued delivery of an optimized performance testing platform is what drives our work every day.

For more information about Neotys or NeoLoad, visit www.neotys.com/resources to see testimonials, case studies and success stories.