



How to Overcome E-Commerce Performance Testing Roadblocks?





Why This Whitepaper is Not a Waste of Your Time

Time Saver

Using an e-commerce website can make the entire world your playground. To add on, the advent of m-commerce (e-commerce on mobile devices) has surpassed every limitation that brick and mortar business faced. For example, a report by Statista shows

The **retail e-commerce sales worldwide** are expected to reach **8148 billion USD** by **2026**

that the retail e-commerce sales were around **US \$ 1336 billion** in **2014** and are projected to increase by more than **6 times** to **US \$ 8148 billion** by **2026**. Many organizations do not understand the importance of providing a user-friendly or easily usable website for their online customers. As a result, they often lose customer engagement and retention. This can cost the reputation of the organization because even a slight delay or an outage during the holiday season can disappoint the customer who is easily carried away to other similar websites. Learn the commonly faced challenges in the e-commerce industry and the ways in which one can overcome them in this whitepaper.





Introduction

E-commerce is a rapidly growing industry, which shows no signs of decline or forfeiture. So, what keeps this industry going successfully are its consumers who are diligently faithful to their favorite shopping sites. For example, an analytical report says that e-commerce accounts for **21%** of global fashion retail sales as on date. This is great news for retailers who strive to improve their business. E-commerce industry expands because of its online customers for whom organizations and businesses need to provide a platform - the website that is seamless and hassle-free. But what is the need to offer this environment? This is because even the smallest shortcoming or failure is capable of impacting one's business and helping the competitor to easily surpass.

Scaling up sales brings more challenges along with it as an organization needs to provide competitive user experience to its customers continuously. And an e-commerce website can make it or break it!

Imagine a slight delay of about 250 milliseconds of a page load time may make your customer bored of your site, which paves an opportunity for your competitor. To avoid such a scenario, retail performance testing, especially holiday readiness, is being implemented by organizations all over the globe, as it helps them build a commercial-friendly website, with innovative & interactive design & features. This is mainly because an e-commerce website has become vital decision-making and powerful marketing tool for consumers, whether they plan to buy products online or in-store.



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A well-maintained website can help organizations receive a competitive advantage in the industry and improve the business image to a great extent. Considering the challenges in the industry, e-commerce businesses cannot afford to lose sales because of poor website design. Market research shows that the global B2B e-commerce business was valued at **USD 7.08 trillion** in **2022** and is projected to grow to **USD 26.59 trillion** by **2030** at a CAGR of **18%**. Any e-commerce business that wants to realize the business's true potential should develop its website to achieve more leads and prospects, increase sales, enhance your professional brand, and improve your customer service.

What's Stopping You?

An e-commerce website should be a worthy counterpart to the storefront since the customers are spoilt for immense number of choices in the market. According to ecomdash, "Any business that isn't moving toward an omnichannel retailing strategy will likely be left behind by its online savvy competitors." To maintain a cordial relationship with the customers, these retailers must deliver an omnichannel customer experience. This is not at all easy since these websites have multiple layers of complex architecture. Being able to simulate every possible user action is impossible because testers cannot always predict the nature of the customers. With the constantly changing technology, testers find it difficult to regulate tools and techniques. Some of the challenges of e-commerce testing are:





Delayed Time to Market

The reason for the delay in taking the website to the market (the website goes live late) can be anything like the repeatedly emerging performance issues that need a permanent solution or the need to add new functionalities that slow down or even crash the website. Organizations try to provide competitive user experience by making repeated changes to the content and functionality of their e-commerce sites almost every single day. As a result, there will be various builds and frequent testing cycles that require huge testing efforts within a short period. Since these changes and evaluations are made manually, the probability of error is unequivocally high.



Incompatibility - Omni-channel usage

No matter how hard omnichannel experiences are aimed to help merchants to increase revenue and customer visibility it causes many retailers lose millions of dollars each year. E-commerce website needs to be compatible with both web and mobile devices of various OS combinations. However, due to cross-channel commerce challenges there are many retailers, **45%** to be precise, who lose more than \$1 million. To avoid this huge loss and to ensure seamless user experience, compatibility testing needs to be done for both web and mobile applications, this can again, complicate the combination of multiple devices.



Reduced ROI

Any organization would want to deliver only the best quality products or services to their customers. To ensure the best is served and hit the market on time before their competitors, e-commerce retailers tend to evaluate the performance of the website even at the eleventh hour. In short, the cost of quality would be sky-high to secure and deliver quality assured e-commerce websites with different continuous testing practices. Even this can often become a huge feat for the testing teams since a small defect rate is capable of influencing the organization with a huge ROI deduction.



Poses Risk of Human Error

On an e-commerce website, there is a simple form where a customer submits his delivery and payment details and clicks the Pay button. The seller awaits the money transferred to his account. Well, this happens in a perfect world, but in reality, it is a lot more complicated. E-commerce businesses use the electronic payment method that refers to paperless monetary transactions. Often, they outsource third parties to take care of these payment processes, which are mostly done manually posing a high risk of human error. These errors can easily become a threat to the e-commerce business risking the reputation itself as it involves sensitive customer data like Debit/ Credit Cards.





Bad Performance

Not all the customers have the patience to wait until the website loads after every selection. The loop between the homepage and landing page can be never-ending if the page response time is longer than expected. A widespread outage or heavy online traffic on a big sale day can bring a huge loss to the business because of the performance issues that are not taken care of during the development of the website or the mobile app. The testing teams are in charge of evaluating the performance whenever a new build is included. Identifying vulnerabilities beforehand is another major responsibility of the load and performance testing teams. Site visitors become paying customers when the performance of the website is seamless and error-free. However, when the evaluation process fails the odds are in your competitor's favor.



What You Need?

To ensure the quality and seamless performance of retail applications and websites especially during holiday season, implementing a sound performance testing strategy is crucial. Organizations must build an effective test automation strategy and implement an automation framework which can also waste no time in setting up the testing environment and provide proper metrics to help take quick decisions. However, when the testing solution is not appropriately designed and strategized then its impact cannot be felt and it eventually fails to deliver the expected ROI.

In this case, organizations need to diligently opt for a performance testing framework. A few factors that need special attention are robustness, easy maintenance, flexible design and the speed at which the testing environment is set up. Other factors include fully integrated cross-browser testing support and mobile testing support on multiple platforms. The framework should be implemented using best practices to minimize the code redundancy and the cost.



An Innovative Solution for E-commerce Testing

Online customers are provided with access to e-commerce sites from various devices such as smartphones, tablets, computers, laptops, etc. Therefore, these e-commerce organizations need to ensure that their customers have a seamless experience across all devices. And for this, testing e-commerce sites and applications is paramount.



What is APTf 2.0?

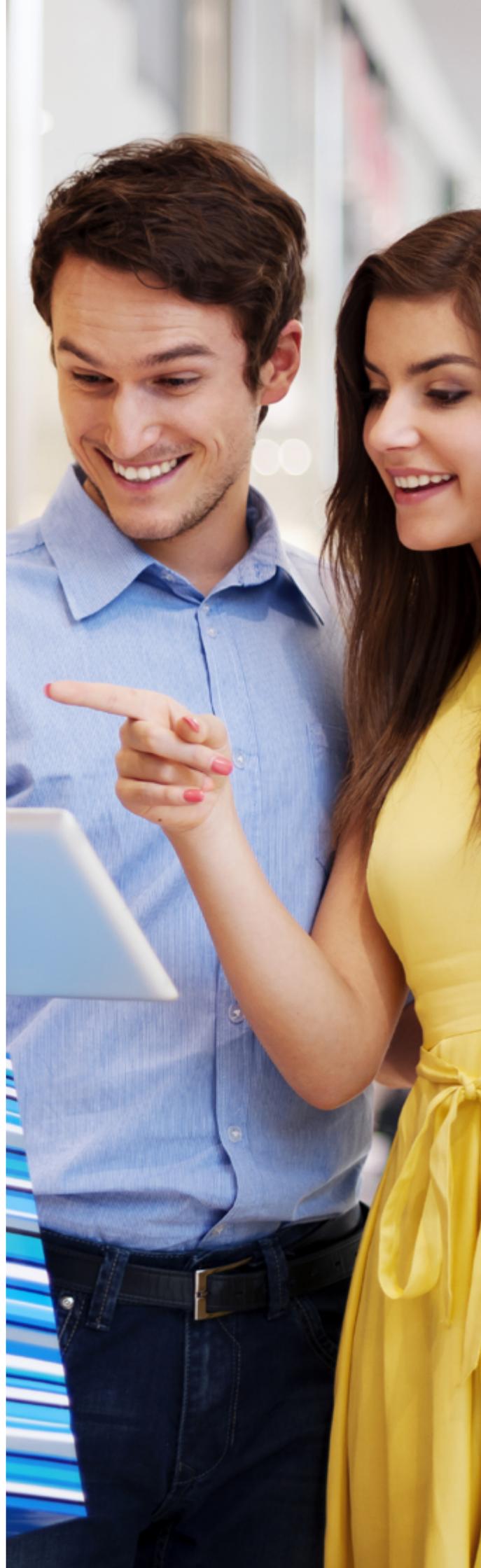
We at Aspire Systems have designed a performance testing solution **APTf 2.0** to help the retailers overcome the performance testing challenges of e-commerce, especially during the heavy rush of the holiday season, and improve their business in the market.

APTf or Aspire's Performance Testing framework is a one-stop-shop for end-to-end performance testing for application using a single framework. The latest upgrade APTf 2.0 like its predecessor, covers all aspects of performance including speed, scalability, responsiveness and endurance. Real-browser testing and simulation of real-world scenarios are also added to its growing list of features.

Capabilities

With APTf 2.0, you can set up your performance testing environment in 4-6 hours and achieve the following:

- **40% savings** on cost
- **50% reduction** in testing efforts
- Real-time inventory checks/shipping method failures
- Defect leakage reduced to less than 3%



Success Story

Who

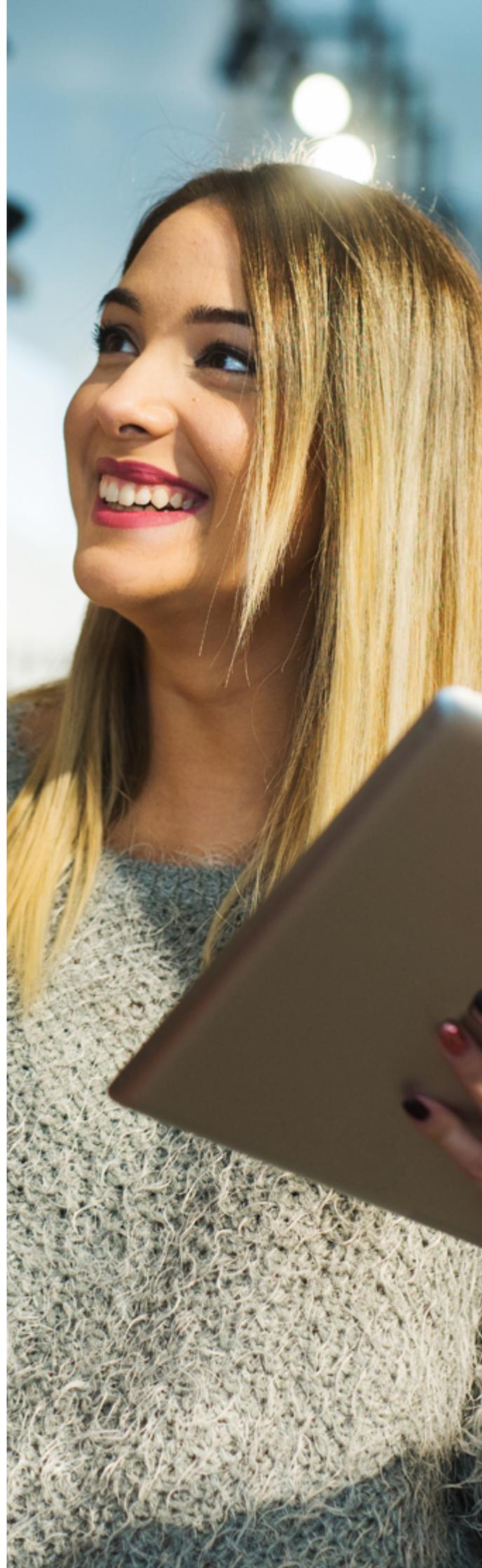
This is a story of how one of our customers faced various challenges like getting ready for the holiday season so that they could provide an exceptional user experience while experiencing around two times the regular load. They overcame this by working with APTf 2.0. Our customer is one of the biggest fashion retailers in USA.

What

Just ahead of the impending holiday season, the customer found that their application performance at high loads would not meet expectations of a smooth customer experience. The customer wanted an end-to-end load and performance testing within a short timeframe in a cost-efficient manner to ensure that the application would remain robust during the high load of holiday season crowds.

Challenges

- Meeting Holiday sale readiness within a tight timeframe to ensure application could handle high user traffic during peak periods
- Inability to gauge app's current performance capabilities and vulnerabilities due to lack of recent performance testing





- Increased infrastructure costs due to non-identification of root causes and unresolved performance issues
- Achieving cost-effective infrastructure scaling while maintaining performance

How

Aspire's Performance Consulting team conducted a thorough analysis of the issues and provided valuable insights for diagnosing and resolving the problems effectively with a range of tailored solutions.

Solutions

- Using APTf 2.0's automation to set up performance testing quickly and reduce infrastructure costs
- Maintaining separate suite for holiday readiness to ensure smooth operations
- Smoke performance test suite to validate impact of changes early in development process
- Providing real-time performance metrics to stakeholders through a dashboard for quick identification and resolution of issues

Conclusion

In short, Aspire's performance testing for holiday readiness to help e-commerce and retailers is an agile testing solution that helps you to achieve high ROI, low TCO, faster go to market and helps in providing better customer experience productivity. This solution has successfully helped many global organizations to overcome their pain-points in testing ecommerce websites. With our intelligent test strategy and APTf 2.0 solution, we have been enabling e-commerce retailers to achieve quality goals within the targeted revenue. We have helped our customers to build an end-end test strategy, implement it successfully and maintain it for long term. APTf 2.0 can highly affect all facets of a holistic customer experience as far as app and software performance is concerned and will be the key brand differentiator in the near future.





Aspire Systems is a global technology services firm serving as a trusted technology partner for our customers. We work with some of the world's most innovative enterprises and independent software vendors, helping them leverage technology and outsourcing in our specific areas of expertise. Our core philosophy of "Attention. Always." communicates our belief in lavishing care and attention on our customer and employees.

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