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Guide to Ramping up eCommerce Websites for the Holidays

18 Critical Steps to Prepare Your Site
for Seasonal Traffic

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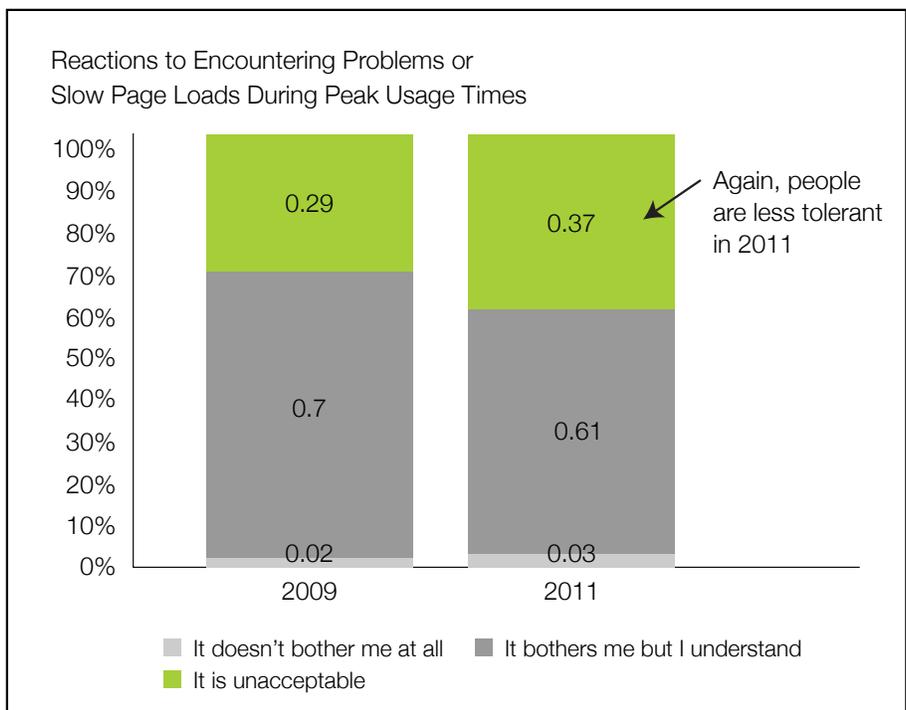
Overview

As the 2012 holiday season rapidly approaches, those in charge of eCommerce are gearing up for what they hope to be stellar online shopping results. And they have every reason for high expectations. After all, in 2011, the US eCommerce holiday season take surpassed all previous online holiday revenues. In fact, 2011 US eCommerce sales rose 15% over 2010, according to comScore. Moreover, between Thanksgiving and the end of 2011, consumers spent more than \$1 billion on 10 different days, compared to only one \$1 billion+ spending day in 2010.¹

The fact is that holiday preparedness can mean the difference between eCommerce failure and success. That's because consumers have high expectations of their online shopping experiences. They want websites to perform well, yet 61% of consumers reported a bad experience during the 2011 holiday season. And this can directly impact your bottom line. Eighty-six percent of consumers are less likely to return to a company's website after a poor experience, 54% will abandon a site after one or two bad experiences, and 31% will make a purchase on a competitors' site².

The Stakes are High

22% of consumers said it would only take a single poor experience (slow website response, web error, or inability to complete a transaction) on an e-commerce website at peak times for them to abandon the site and shop elsewhere.³



Retail Sites Are Not Measuring Up

According to Compuware, 86% of the top 50 US retailers experienced a decline in shoppers' estimated satisfaction with website performance compared to non-holiday baseline levels in 2011.⁴

This paper covers the two key elements that retailers must address to ensure holiday success:

- Infrastructure performance, availability and scalability
- Design and user experience

Read on to find out how to make sure your site can absorb spikes in traffic and is designed to encourage sales.

Start With a Solid Foundation

Your infrastructure – the web servers, databases, application servers and other hardware and software – form the bedrock of your eCommerce site. If your infrastructure isn't performing optimally, available for every shopper, and able to scale to support any number of site visitors, all your marketing efforts are for naught. The following ten best practices will help ensure your infrastructure provides a solid foundation for holiday success.

1. Set expectations. It's difficult to prepare for the unexpected. To get a sense of holiday traffic expectations, tap into a historical data, metrics, analytics and this year's marketing plan.

Review last year's problems, whether captured anecdotally or via metrics. That way you can take measures to avoid repeating these issues. In addition, analyze and benchmark your previous holiday traffic patterns so you know what peak load you've had to support in the past. Augment this with expectations for this year's traffic by understanding the marketing plan and anticipating how various promotions and activities will impact traffic flow. For example, a promotion on the radio or television will likely cause an immediate spike in traffic because consumers will respond simultaneously. On the other hand, consumers are likely to respond in waves to an email promotion, since everyone checks their email at different times.

Is this your first holiday season? Then focus on gauging anticipated traffic based on your marketing plan.

2. Address uptime and disaster recovery. Before you can determine what type of infrastructure and hosting you require, you need to figure out your tolerance for downtime. Is it 30 minutes? One hour? One day? The answer usually hinges on the amount of money you stand to lose during the time your site is unavailable. Once you have a number in mind, you can choose from one of five options:

- *Geographically dispersed servers* – Multiple, redundant servers are deployed in different locations.
- *Hot standby* – A server will automatically fail over if your primary server fails.
- *Warm standby* – A server will fail over only when programmed to do so, i.e., failover does not occur automatically.
- *Cold standby* – Spare server that must be deployed and booted when needed.
- *Back up to remote location* – Data from your main deployment is backed up to a remote location for recovery in case of downtime.

As you research your options, look for a provider with multiple datacenters and the ability to back up to other locations.

3. Implement additional services for better performance. Understand the hosting provider's ability to ensure fast page loads through support for load balancing, DNS, and content delivery.

Load balancing enables you to operate multiple web servers so if one goes down, fails or reboots, site traffic will be routed to a functioning server. It also enables your traffic load to be spread out so spikes in traffic do not take the site down as total capacity is increased. In addition, it improves scalability as you can deploy additional load-balanced web servers on the fly without site downtime.

DNS services are also critical to site performance. The first experience visitors have with your site occurs the moment they click on your web address after conducting an online search. When they click, the web browser executes a DNS request, scouring name servers across the globe to find your IP address. Once the browser is directed to your IP address, it loads it along with your home page. The amount of time it takes to accomplish this can be mere milliseconds or multiple seconds. The ramifications are clear; visitors bounce from your site if it takes too long to load.

Content delivery networks (CDNs) offload images and static content from a distributed network of computers rather than your origin server, choosing the server closest to the site visitor to ensure fast delivery.

4. Aim for redundancy. Once you understand what traffic you can expect, you can determine whether or not your existing infrastructure can handle these traffic spikes without fail. If it can't, you need to make adjustments.

The best solution is to put in place full redundancy across your infrastructure. However, this isn't a realistic approach for all retailers. In such cases, managed services are a proven way to shore up infrastructure for the holidays without overextending your infrastructure for the long haul. With managed services, you tap into additional infrastructure and services as needed, offloading these concerns to a third party, and turn them off when traffic patterns settle down.

5. Separate application and database layers. Ideally, you want each server focused on its specific function so it can run optimally. With this in mind, separate your database and web layers. Your database server should be writing and reading and communicating with the web server, while the web server should serve your web pages and content. If you want to address redundancy here, you could load balance by adding a database cluster and an additional database server.

6. Test performance. Regardless of the model you choose to serve your site – for example, from a private cloud, from the public cloud, or from your in-house datacenter – you need to continuously test performance throughout the holiday season. Testing is important because you can't guarantee end users a certain level of performance without understanding your capabilities and tweaking your infrastructure as necessary. This is especially critical if you're blending models, such as by hosting one set of servers in a dedicated environment, and the other set in a virtual environment. After all, in a shared environment, you are given guaranteed disk space but there's no assurance of a certain level of performance or throughput. That's because it's impossible for the provider to anticipate what resources will be consumed by all companies in a shared environment. Combine this with the traffic fluctuations you'll see during the holiday season and it becomes clear why you need to continuously test.

Master the Basics for Optimal Performance and Availability

- Monitor your site
 - Review transaction levels
 - Look for 404s
 - Decrease load time
 - Add more servers as needed
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7. Scale to support traffic spikes. You need to accommodate exceptionally intense traffic spikes that come about as the result of promotions and general increases in traffic during the holidays. Bursting into the cloud is a proven – and economical – way to absorb traffic spikes without expanding your infrastructure footprint. Another option is to have servers pre-racked and ready to deploy as needed. If you choose to go this route, make sure you line up all your resources ahead of time. This includes ensuring content on your existing and new servers can be synced for consistency; validating that the new servers satisfy your CPU, memory and space requirements; and being prepared to activate enterprise software licenses to run on the new servers.

8. Tap into basic and advanced monitoring. If you're working with a third-party provider, request access to a portal so you can monitor resource availability and performance. That way, if you hit bottlenecks, spikes, or latency, you can quickly pinpoint and resolve issues by identifying the root causes.

Basic monitoring should include pinging of servers, and monitoring web ports and basic resources for availability. Advanced monitoring should include monitoring site URLs for availability, and testing site speed and the end-user experience. Advanced monitoring can also replicate a transaction and if any step fails or is too slow, can trigger alerts. Such monitoring is key because without it, you may be unaware of a bad script or site error until you see that your site didn't process any transactions the previous day.

Consider hiring a firm to run an external scan of your site to provide recommendations for improving your site. These may include compressing image files and fixing poorly written scripts, for example. Because it's easy to overlook issues with your own site, it's ideal to get as much insight as possible through third-party monitoring, code review, and analysis.

9. Optimize computing layers. By focusing on a few key areas of your infrastructure, you can ensure better performance.

- *Database:* Make sure you're using high-speed drives for your database, and that the database is set with the proper rate configuration. Then tune the database.
- *Web servers:* Fill up the RAM slots in your servers, enable caching, speed up PHP to remove overhead, and tune your web servers. To speed up PHP scripting, determine which parts of the code are slow and identify areas of your code where repetitive results can be reused. To tune web servers, identify your target traffic loads and configure services to consume the appropriate resources to achieve the target levels. Load test the solution with as close to real-world scenarios as possible, and use multiple scenarios from geographically diverse regions if possible.
- *Applications:* Fine-tune your applications to run optimally on your operating system. Determine areas that your application can cache repetitive processing of information, or move PHP sessions to a memory-resident location for faster reads and writes. In addition, isolate services across servers in order to maximize resource utilization.

10. Satisfy PCI compliance requirements. To determine what you need when it comes to PCI compliance, you need to first understand four PCI compliance levels as defined by the Payment Card Industry Data Security Standard (PCI DSS):

- *Level 1:* Any merchant – regardless of acceptance channel – processing over 6 million Visa transactions per year.
- *Level 2:* Any merchant – regardless of acceptance channel – processing 1 million to 6 million Visa transactions per year.
- *Level 3:* Any merchant processing 20,000 to 1 million Visa e-commerce transactions per year.
- *Level 4:* Any merchant processing fewer than 20,000 Visa e-commerce transactions per year, and all other merchants – regardless of acceptance channel – processing up to 1M Visa transactions per year.

If you fall under level 1 or 2, you probably want to avoid the public cloud because you'll be vulnerable to performance and availability issues beyond your control. Instead opt for a private cloud or private infrastructure. Also consider using a PCI-compliant, cloud-based SSL encryption network to ensure fast transactions.

Focus on the Shopper's Experience

In addition to taking care of your behind-the-scenes infrastructure, you need to make sure shoppers will be satisfied with your site. You can't afford to leave this up to chance – too much is riding on this experience. Follow these eight best practices to deliver a shopping experience that spurs purchases and word-of-mouth referrals.

1. Plan early. Just as shoppers regret putting off their holiday shopping until the last minute, you'll regret not planning far enough in advance to ready your site for the holidays. The amount of prep time needed is usually tied to your holiday plans and business volumes. In other words, the more business you expect to do, the more you'll need to plan well in advance. This includes securing budget and holding kickoff and regular meetings throughout the project.

Create a calendar that takes you through year's end and maps out all relevant activities, assignments, responsibilities, etc. A calendar gives everyone an at-a-glance view of everything that needs to get done, and helps keep people on track.

Wherever possible, finish things far in advance so you avoid a mad rush in November and December. For example, line up your email templates in September and then just drop in copy specifics when you're ready to send.

Be sure to think about how various activities interrelate. For example, if you're planning 3-5 Facebook updates per week, how will these tie into emails you send out? And don't forget to think about ways you're going to build up your email list between now and the holidays.

- 2. Keep creative simple.** Customers want to shop, so don't let site design get in the way of user experience and the shopping cart. Start with simple holiday theming and invest as much time as makes sense in light of your potential ROI. Even if you're not selling holiday items, you should align your site design with the holidays. This is especially important for smaller and mid-tier retailers that need to cut through the noise made by larger retailers.
- 3. Tune up for search.** Research the terms people are plugging into search engines and on your site search mechanism. Then determine whether or not you're seeing good results for those searches. If not, fine-tune your site for search. If you don't know all the tricks of the trade, consider hiring an SEO consultant.
- 4. Accelerate page load times.** Today's consumers expect rich, interactive experiences when shopping online. The problem is that all that heavy content can make your site performance sluggish. To address that, optimize your HTML, CSS, JavaScript, and images to minimize page sizes and load times.
- 5. Think social.** More and more people rely on their social networks for shopping advice and recommendations. So it only makes sense that you establish a presence on those networks where your target shoppers spend time. Use the time leading up to the holidays to plant a foothold if you don't already have one. And if you already have a presence on certain social networks, put in place a plan to ratchet up your interactivity and offers so that you're top of mind come shopping time. Don't forget that social signals on networks like Facebook, Twitter, Pinterest, and YouTube show up in search engine results, so you really can't afford to overlook these channels.
- 6. Make it easy to buy.** Create shopping and buying guides to make it easy for people to make decisions when they're buying for others. Take this opportunity to highlight your opinions or expertise. In other words, give shoppers a reason to buy from you instead of the manufacturer or another retailer. And consider categorizing products so people can easily buy gifts. For example, make it easy for them to find gifts under \$20, under \$50, or based on the person they're buying for (e.g., for Mom, for Dad, etc.).
- 7. Streamline transactions.** Do you offer gift certificates or gift cards? If so, make sure your site is set up to process these. And once shoppers have made a purchase, let them know – both on your site and via email – that their transaction was successful and that their order is being processed. Then verify delivery options and/or dates.
- 8. Create a sense of urgency.** Add a holiday countdown timer to your site to remind people that the clock is ticking down. Pair this with a holiday shipping schedule that encourages early purchases.

Summary: Get Ready to Ring Up Holiday Sales

'Tis the season (or soon enough it will be) and your business wants to make it the best one ever. Don't leave your holiday sales to chance. Observe these 18 best practices and you'll be well on your way to a banner year. And if you're feeling overwhelmed, engage a hosting partner that can help you optimize your site and scale to support all the holiday crowds.

To get your hosting infrastructure ready for the holidays or any seasonal traffic, visit our eCommerce page at <http://www.peer1.com/e-commerce-website-hosting> or contact the eCommerce team at PEER 1 Hosting today at 1.866.579.9690

About Ethan Griffin and Groove Commerce



Groove Commerce is the brainchild of CEO Ethan Griffin, an industry expert in eCommerce, e-marketing and the dynamic technologies behind them. For years, Ethan has lived and breathed conversion rates, search engine visibility and web analytics. Ethan is regularly invited to speak at the industry's top conferences, including: Internet Retailer, SMX West, PubCon and SES.

Groove Commerce is an award-winning full-service agency. Using elements of design and online marketing, Groove also maximizes website performance around traffic, conversion rate, and average order value. A Maryland-based Magento Gold Partner, its services include eCommerce website design, PPC management, SEO, conversion rate consulting, and ongoing optimization services. For more information visit **www.groovecommerce.com**.

Footnotes

¹ Compuware Corporation, Survey Finds Web Performance During Peak Traffic Impacts Consumers and Business Results, 2012

² Compuware, Consumers Less Tolerant of Poor Performance, February 8, 2012

³ Compuware Corporation, Survey Finds Web Performance During Peak Traffic Impacts Consumers and Business Results, 2012

⁴ Ibid