

Content Delivery Networks (CDNs) Best Practices

1. **Make sure you have a solid business reason to outsource content delivery.** There are many reasons to consider using a Content Delivery Network (CDN). Since CDNs distribute your content from many locations around the country/world, your customers can receive content faster, your servers are under less load, and your costs may actually go down. However, there are several drawbacks for retailers when deciding to use a CDN. Be sure to research and consider these.
2. **Identify where your customers are; investigate latency to their location.** If your servers are in California and many of your customers are in New York, look at how long your pages load in California and compare them to New York. There are service that will allow you to analyze the response, latency, transmission, and other components that make up the end-to-end time a page needs to be rendered on your customer's browser. You may find that components outside of the network transmission are better targets to start with.
3. **Make sure you identify which areas of your site can be put onto a CDN.** There are two main aspects that can be cached on a CDN: images and other assets, and the HTML. As non-HTML content normally comprises 70-90% of the weight of most pages, there is some opportunity for improvement in caching across a CDN. However, on the HTML side, many eCommerce sites have dynamic data which is difficult to cache on a CDN. Examples of dynamic data are mini-carts, real-time inventory, and prices. Cache may be able to be cleared in a timely manner to accommodate inventory and price information but mini-carts can never be cached. Also evaluate newer content like Video, Audio and Rich Media (Flash, Silverlight and high resolution images) as areas that can be put onto a CDN or similar service.
4. **Carefully think about the benefit of using a CDN.** How much does an improved site speed help your sales? Does it enable customers to shop faster, and does this translate into more sales? Is your current site so slow that it drives away sales? Is the traffic on a CDN cheaper than your current ISP? Although most of these are subjective, determining the answers to questions like these will help you understand what benefit you will achieve.
5. **If using a CDN, try to address the slowest page components first.** Remember, the slowest loading asset will dictate how fast pages load. If you have cached 99% of your site which could load in 1 second, but the other 1% loads in 20 seconds, then your page load time will never be better than 20 seconds. Optimizing the slowest components may be done via CDNs, but may not be.
6. **Monitor performance and continually make adjustments.** Once you have implemented a CDN, you will need to continually monitor and improve your site performance. You may have improved the first set of slow pages; now it is time to look for the second round.
7. **Don't use a CDN to make up for an un-optimized site.** If your site has extremely heavy pages that are unnecessary, first address these pages, then revisit the CDN question. Often, product images that are 500Kb could be equivalently downsized to 100Kb with little or no visual impact. Reducing the image sizes is a good first step. The same argument could be made for reducing unused or hidden text on the site.
8. **Fully dynamic pages may not be easily used on a CDN.** If your site is generating dynamic pages from your application server (e.g., 'My Account', 'Order Pages'), your server may generate these pages individually for each request and a CDN would not be able to cache them for performance gains. A CDN may not help improve these pages; optimizing the server code may.

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