

# How do you Improve a Website's Page Speed?

Low website speed is one of the most frustrating things that will turn people off about your resource, and cost you money and reputation. By reducing the page load time, you will positively impact marketing and sales processes, get higher traffic, and attract more qualified leads that can be converted into customers.

## Website Speed Optimization

Website speed optimization is a set of techniques aiming to make your site as fast as possible. Key metrics of website speed include

- Time To First Byte (TTFB): How long it takes to receive the first byte of response from the server.
- First Contentful Paint (FCP): How long it takes to load the first text or image.
- Largest Content Paint (LCP): How long it takes to load the largest element of the site, be it text or visual.
- Page Load Time (PLT): How long it takes to display the entire content of a web page on the user screen.

To ensure a good user experience, websites should keep their TTFB under 0.8 seconds, FCP under 1.8 seconds, LCP under 2.5 seconds, and PLT under 3 seconds. At the same time, a recent analysis of the top 100 web pages showed that the average page load time was 2.5 seconds on desktop and 8.6 seconds on mobile.

## Web speed that ensures a good User Experience:

Let's take a look at how website speed influences the key factors of website success such as conversion, visibility, usability and scalability.

### Conversion:

Website conversion means getting your visitors to do what you want them to do. For instance, they will buy your product, subscribe to newsletter campaigns, register for a webinar, or download a guide. The faster the page loads, the higher conversion rates it'll have. According to HubSpot research, load times between 0 and 4 seconds bring the best conversion rates. A 1-second delay means a 7 percent reduction in conversions. For instance, a page slowdown of 1 second could cost Amazon \$1.6 billion in sales each year.

## **Visibility:**

Website speed is one of the factors that Google takes into consideration when ranking sites. A low-performing website has a poor user experience and, consequently, gains less promotion in search results. Since December 2017, the Google search engine started primarily ranking mobile versions of pages, even for desktop searches. The goal of this decision is to penalize websites that have low performance and aren't responsive to all devices.

## **Usability:**

Website usability refers to the ease of use of your site. Among other things, it considers page speed and responsiveness to requests that directly impact customer loyalty. The better your website performs, the more satisfied a user will be. A great user experience is a way to build a large customer base and a strong brand.

## **Scalability:**

As your company grows, more and more customers start visiting your website. Speed optimization ensures that your e-commerce store or other online business will scale meaning it can handle the increased traffic not sacrificing the speed.

## **Site Speed Test with Google Page Speed Insights, Pingdom, and others**

Before starting speed optimization, you should determine your current loading times and define what slows your site down. Then you should set your website performance goals. If you optimize your website speed to an acceptable level, you will retain customers and get a significant ranking advantage over competitors.

The ways of website speed optimization listed in this article are very different and sometimes the solution to one problem can have the negative impact on another aspect of your site. That's why we recommend analyzing the website speed after each change to determine what actions deliver the best results.

There are several performance evaluations tools that are worth trying:

**Google Page Speed Insights** is a free tool from Google that runs a performance test on your site and provides recommendations on how to increase speed. It works for both desktop and mobile versions.

**Pingdom** is another great tool for website speed testing with a number of useful features. It tracks your website's performance history, makes data-driven recommendations on how to improve the website

speed, and generates easy-to-understand reports. Pingdom also provides the apps for website speed testing for Android and iOS. It has both free and professional paid monitoring plans.

**YSlow** also provides recommendations on how to improve the performance of the page, draws statistics, and summarizes all components.

**GTmetrix** evaluates how your website performs across different devices and reveals what makes it slow. The tool generates a summarized report to highlight optimization opportunities. You can monitor key metrics continuously and set up alerts that will notify you on performance issues.

## **How to improve website performance:**

Once you have tested the speed of your website, you can start optimizing it. There are a lot of different ways to make your website work faster, and we created a list of the most effective ones.

### **1. Use a Content Delivery Network (CDN)**

A content delivery network is a set of web servers distributed across various geographical locations that provide web content to end users with regard to their location. When you host the website on a single server, all requests from visitors are sent to the same hardware. For this reason, the time needed to process each request increases. On top of that, the load time grows when users are physically far from the server.

With CDN, user requests are redirected to the nearest server. As a result, the content is delivered to a customer quicker and a website works faster. This is a rather expensive, but quite effective way to optimize the load time.

### **2. Move your website to a better host**

There are three possible types of hosting:

- Shared Hosting
- Virtual Private Server (VPS) Hosting
- Dedicated Server.

The most popular type of hosting is Shared Hosting. That's the cheapest way to get your site online in a short time and for a low fee. It's essential to choose a fast web host to ensure better optimization. With shared hosting, you have a portion of CPU, disk space, and RAM with other sites that also use this server. This is the main reason why shared hosting isn't as fast as VPS or a dedicated server.

VPS hosting is an isolated virtual environment within a bigger server. You can configure it as you wish, taking advantage of dedicated resources (CPU, RAM, storage space, and operating system).

If your website has the average traffic or you have the eCommerce site with traffic spikes in some periods, VPS will be the optimal option for you.

The most expensive hosting option is a dedicated server which can be your own physical server. In this case, you pay a server rent and hire a system administrator to maintain it.

Another approach is to rent dedicated cloud resource from AWS, Microsoft Azure, Google, or other public cloud provider. Both approaches can also be combined into a hybrid cloud. With dedicated servers, all resources belong only to you and you get the full control of it. Cloud infrastructures can also add unlimited and on-demand scalability under a number of packages.

Serverless architecture is yet another option that removes maintenance and server set up procedures altogether.

### **3. Optimize the size of images on your website**

Everyone loves eye-catching images. A lot of photos and graphics on your product pages improve engagement. The negative side is that visuals are usually large files, slowing down a website.

The best way to reduce the image size without compromising its quality is to compress files with such tools as ImageOptim, JPEGmini, or Kraken. The procedure may take a bit of time, but it's worth it. You can also use the HTML responsive images `<img srcset="...">` and `<img sizes="...">` attributes that adjust image size based on user display properties.

### **4. Reduce the number of plugins**

Plugins are common components of each website. They add specific features suggested by third parties. Unfortunately, the more plugins are installed, the more resources are needed to run them. As a result, the website works slower and also security issues can appear. As time passes, the number of plugins grows, while some of them may not be used anymore.

We recommend checking out all the plugins you have installed and deleting unnecessary ones. First, run the performance tests on your page to find out which plugins are slowing down your website. Not only does the website speed depend on the number of installed plugins, but also on their quality. Try to avoid

plugins that load a lot of scripts and styles or generate a lot of database queries. The best solution is to preserve only the necessary ones and ensure they are kept up to date.

## **5. Minimize the number of JavaScript and CSS files**

If your website contains a lot of JavaScript and CSS files, it leads to a large number of HTTP requests when your visitors want to access particular files. These requests are treated individually by a visitor's browser and slow down the website work. If you reduce the number of JavaScript and CSS files this will undoubtedly speed up your website.

Try to group all JavaScript into one and also do so with all CSS files. This will reduce the overall number of HTTP requests. There are a lot of tools to minify HTML, CSS, and JavaScript files quickly. For instance, you can use WillPeavy, Script Minifier, or Grunt tools.

## **6. Use website caching**

In case there are a lot of users accessing the page simultaneously, servers work slowly and need more time to deliver the web page to each user. Caching is the process of storing the current version of your website on the hosting and presenting this version until your website is updated. This means that the web page doesn't render over and over again for each user.

Approaches to website caching depend on the platform your website is developed on. For WordPress, for instance, you can apply the following plugins: W3 Total Cache or W3 Super Cache. If you use VPS or a dedicated server, you can also use caching under your general settings. In the case of the shared server, website caching isn't usually available.

## **7. Implement GZIP compression**

GZIP is a modern standard of file compression employed by more than half of websites. It can reduce the amount of data transferred over the Internet by 70 percent and thus dramatically improves a site speed.

GZIP compression minimizes the content of HTTP requests and responses before sending them to the browser. On the user side, a browser unzips the files and presents the contents. This method can work with all files on your website. There are also other data compression methods such as Brotli (used by 39 percent of websites) and Deflate (used by only 0.6 percent of websites).

Learn what option your server supports. If it hasn't enabled any, read the documentation of your hosting provider to get instructions on your next steps. Note that your host may not permit you to implement compression. But in most cases, it takes adding a few lines of code or installing a utility (gzip or Brotli) to reduce files and thus speed up your website.

## **8. Optimize a database in CMS**

Database optimization is an effective way to increase performance. If you use a content management system (CMS) packed with complex plugins, the database size increases and your website works slower. For instance, the WordPress CMS stores comments, blog posts, and other information that takes up a lot of data storage. Each CMS requires its own optimization measures and also has a number of specific plugins. For WordPress, for example, you may consider WP-Optimize.

## **9. Reduce the use of web fonts**

Web fonts have become very popular in website design. Unfortunately, they add extra HTTP requests to external resources, which has a negative impact on the speed of page rendering. To reduce the size of web font traffic, use modern formats WOFF2; and include only needed character sets and styles.

## **10. Detect 404 errors**

A 404-error means that a "Page isn't found". This message is provided by the hosting to browsers or search engines when the accessed content of a page no longer exists. To spot and correct a 404 error, use error detection tools and plugins. As we mentioned, additional plugins can negatively affect your website speed, so we advise running the resource through external tools for instance, Xenu's Link Sleuth or 404 Redirected Plugin for WordPress.

Once you've detected all 404 errors, you need to assess the traffic that they generate. If these dead links no longer bring any visits and thus never consume your server resources, you may leave them as they are. If these pages still have some traffic coming, consider setting redirects for external links and fixing the link addresses for the internal ones.

## **11. Reduce redirects**

Website redirects create additional HTTP requests which negatively impact performance. We advise to keep them to a minimum or eliminate them entirely. First, you should identify all redirects on your page by running a site scan. You can use Screaming Frog to quickly identify redirects. Then you must check if they serve a necessary purpose and leave only the critical ones.

## 12. Use Prefetching techniques

Prefetching entails prereading and executing instructions before a user initiates them. The technique is relatively common. It works well if you can anticipate user actions and, for instance, load some content or links in advance. Usually, modern browsers allow for prefetching by default as they assume user behavior patterns. However, UX specialists and engineers are more likely to understand user behavior and make “hints” for browsers to do prefetching work. There are three main types of prefetching.

**DNS-Prefetching.** The practice entails resolving domains into IP addresses in advance.

**Link Prefetching.** If you are sure that a user will click on a specific link to navigate to some page, you can apply this type of prefetching. The method is useful for stable customer journey actions, like moving to the shopping cart page after one or several items were added.

**Prerendering.** This approach means rendering an entire page or some elements of it in advance.

While prefetching is effective, it requires deep user behavior analysis to make precise assumptions.

### Fast Websites: Essential steps to improve User Experience

We recommend applying a simple yet effective website speed optimization approach which includes the following steps.

**Check and Evaluate** the key factors of website success, considering conversion, visibility, and usability.

**Test** your current website speed against key metrics time to first bite, first contentful paint, largest contentful paint, and page load time. Note that not only your homepage needs checking. Test your product pages, blog posts, and other parts of the website. It’s also essential to evaluate how your site performs on mobile devices.

**Prioritize Fixes** depending on what needs the most attention. For instance, if it takes too long (beyond 1.8 seconds) to receive a response from the server (poor time to first bite), you should consider moving to a faster host (say, a dedicated server), implementing CDN, and setting up a caching layer.

**Start** your optimization with the most speed-reducing aspects and focus on the pages that define your conversion success the most.

**Implement regular audits and reporting.** Website speed testing should become a part of your routine. Conduct it on a regular basis, especially after updates, bug fixes, or adding new content to your site. Regular checks will protect your online business from performance setbacks.

# Best Practices for Link Building?

When reputable websites link to your website, Google may view your site as more authoritative. And rank it higher in search results. Here are 10 link building strategies you can use to get quality backlinks:

## 1. Add Value to Other Sites Articles

If you convince a content creator that your link will add value, they may update their existing article with a link to your site. So, look for articles where a reference to your brand or brand asset could add value.

For example:

- Business roundups that would be more comprehensive if they mentioned your business.
- Blog posts that would be more visually appealing if they included your infographic.
- How-to guides that would be more useful if they linked to your free tool.
- Reports that could use your statistics to back up their arguments.
- Resource pages that would be more complete if they linked to your blog post.

Then, reach out to the creator with your proposal. The writer might update their article if they're made aware of something worth adding. And you could receive a backlink as part of their citation.

Find and pursue opportunities like these with SEMrush's Link Building Tool.

After setting it up, go to the "Prospects" report. Where you'll find a list of link building prospects (sites that might link to you). If there's a URL for a specific page (not just the homepage), this could be a good place for your backlink. Click the icon to visit the page. If so, return to your report.

Click the arrow alongside the corresponding "To In Progress" button and select "Add link to article." The prospect will move to the "In Progress" tab. Make sure your email account is connected. Then, click the corresponding "Contact" button.

Now you're ready to craft a friendly but persuasive outreach email:

- Select the email address for the most appropriate contact (or find the best email address yourself).
- Write a short but compelling subject line.
- Address your chosen contact directly.
- Explain where you'd like them to add your link and how it will add value.
- Make use of the placeholders and consider saving your template for future use



## **2. Find Broken Backlinks and Suggest Replacements**

Broken link building is the process of finding broken links on reputable websites and convincing the creators to replace them with working links to your website. It's an effective link building method because no one wants broken links on their website. And you're providing an easy solution.

Broken link building is most likely to be successful if the link was supposed to point to your site in the first place. You can find your broken backlinks with the Backlink Audit tool

It's also a good idea to check out competitors' broken backlinks with Backlink Analytics. Because you may have content to act as replacements for theirs. After searching a rival domain, go to the "Indexed Pages" tab and check the box next to "Broken Pages." The tool will reveal your competitor's broken pages. Look out for those that you have a good replacement for. Then, you can try to acquire the backlinks that point to them.

Upload your chosen prospects to the Link Building Tool. So, it's easier to manage the rest of the outreach process. In your email, explain where the broken link is. And why your link makes a good alternative.

## **3. Ask Publishers to Link Your Unlinked Brand Mentions**

Unlinked brand mentions are instances where websites refer to your brand without including a link to your site. And they might be willing to add a link if you ask. Find unlinked brand mentions with the Brand Monitoring app. Configure the tool to search for branded terms (and any common misspellings). And it will provide a report featuring all your mentions.

To focus on unlinked mentions, expand "Mention details" > "Backlinks" and select the circle alongside "Without backlinks". You might also want to focus on mentions with positive sentiment. Because these sites are more likely to fulfill your link request. When you're done, export your data as a CSV file. So, it's easier to upload your chosen prospects to the Link Building Tool.

Here are some quick tips for drafting your outreach email:

- Thank the publisher for your positive mention.
- Politely ask whether it's possible for them to include a link by way of attribution.
- Suggest where the link should be placed and what URL should be used

## **4. Acquire and Replicate Competitors' Backlinks**

When developing a link building strategy, it's important to look at competitors' backlinks.

First, there may be backlinks you can acquire. In other words: If you have a better version of your rival's page, you may be able to convince the creator to link to you instead. This link building technique can give you a competitive edge.

Second, there may be backlinks you can replicate.

For example, a publication that interviewed your rival's CEO might be interested in interviewing your CEO, too. This technique helps you to close any backlink gaps. So, compare your backlinks against competitors with the Backlink Gap tool. Enter your domain and up to four rival domains. Then, click "Find prospects."

The "Best" tab is displayed by default and shows domains that link to all your competitors but not to you. Click the arrow in the corresponding column to learn more about each competitor's backlink(s). And develop a plan for acquiring or replicating them.

Then, use the checkboxes and "+ Start outreach" button to send your prospects to the Link Building Tool.

## **5. Respond to Media Requests**

When content creators need expert input or a specific asset (e.g., a product image) for their article, they may issue a media request.

Responding to these requests can be an effective link building tactic because:

- It can help you get featured in high-quality publications
- Responses are often quick and easy to provide.
- Creators often credit their chosen contributors with a link

This technique used to be called HARO link building, because people primarily used the HARO (Help a Reporter Out) platform to find requests. That platform is now called Connectively. If you join Connectively as a subject matter expert, you can search for relevant requests. And sign up for email alerts.

When you find a relevant request, try to give the creator exactly what they need. And respond as quickly as possible. This will maximize the chance of your submission being used.

## **6. Use Digital PR to Grab Journalists' Attention**

Digital PR is the process of generating online media coverage for your brand. And it can be an effective backlink building technique.

Generally, it works like this:

- You develop a story related to your brand and a current trend/news story.
- You distribute this story to relevant writers via a press release.
- Writers cover your story and may credit you with a link

It's possible to get coverage of company news e.g., Mergers and Acquisitions, new hires, and product launches. But you may have more success with creative campaigns.

Digital PR campaigns like this can generate high volumes of mentions and backlinks. For the best chance of success, build your prospect list with a tool like Prowly. You can find media contacts based on topics, locations, and more:

Save your chosen contacts to a list.

Then, you can draft and send your pitch within the tool.

## **7. Create Link Bait**

Link bait is content that naturally accrues backlinks. Usually because it:

- Acts as a useful source for writers—or a useful resource for their readers.
- Ranks prominently in search engines (i.e., is easily discoverable).
- Delivers value that's hard for others to replicate

Think about the types of content in your niche that people might want to link to. Then, try to create the very best version of it and optimize it for search.

You can also improve your content's discoverability by:

- Posting it on social media.
- Sharing it in relevant communities (as long as it's genuinely helpful).
- Linking to it from your email newsletter.

## 8. Collaborate with Your Partners

If you have any partnerships with businesses, organizations, or influencers, see if you can get backlinks out of them. For example, vendors/suppliers might want to:

- Announce your partnership on their blog
- List you on their “clients” page
- Publish a testimonial you’ve provided
- Create a case study about your business

You can also run collaborative marketing campaigns to multiply your link building efforts.

## 9. Recover Lost Backlinks

If one of your backlinks is removed, consider trying to get it back. Because if a domain linked to you in the first place, they’re probably willing to do it again. After all, the creator might have deleted your link accidentally. Or maybe their content needs have changed, but they’d be willing to include a link to something else on your website.

Find and monitor your lost backlinks with the Backlink Audit tool. After setting up your project, go to the “Lost & Found” report.

Click the blue number next to “Referring Domains” > “Lost.”

Then, click “Advanced filters,” select the “Authority Score” drop-down and set a custom range from 50 to 100. (This means links from those domains are likely to be the most beneficial.)

You’ll see authoritative domains that you’ve lost all backlinks from in the specified time range—i.e., domains you no longer have any active backlinks on. Visit any source URL to try to work out what happened to your backlink.

If you want to compare against the old version of the page, you might be able to find it on the Wayback Machine. Think there’s a chance of getting your backlink back (on the original page or elsewhere on the site)? Send a friendly email to the page or website owner.

## 10. Build Your Brand

One of the best ways to acquire links is to build brand awareness and a strong brand identity.

Because it increases the chance that content creators think of and choose your brand when adding links.

For example, WebMD is a well-known and well-regarded health site. So, when creators need to source health information, they're likely to link to WebMD.

Here are some ways to build a brand that people link to:

**SEO:** Get unpaid exposure in search engine results pages

**Social Media Management:** Expand your reach and build connections through social platforms

**Digital Advertising:** Pay to promote your brand in relevant locations

**Influencer Marketing:** Incentivize influencers to promote your brand to their audiences

**Guest Blogging:** Write authoritative blog posts for relevant sites in your niche

**Content Marketing:** Create and distribute content that boosts your visibility and topical authority

There's also a flywheel effect in link building: The more links you acquire, the more your authority and visibility increase. Making it easier to build links in the future