storyblok

The State of the Enterprise Web

We Analyzed Fortune 500 Websites' Start Pages, Here's What We Found
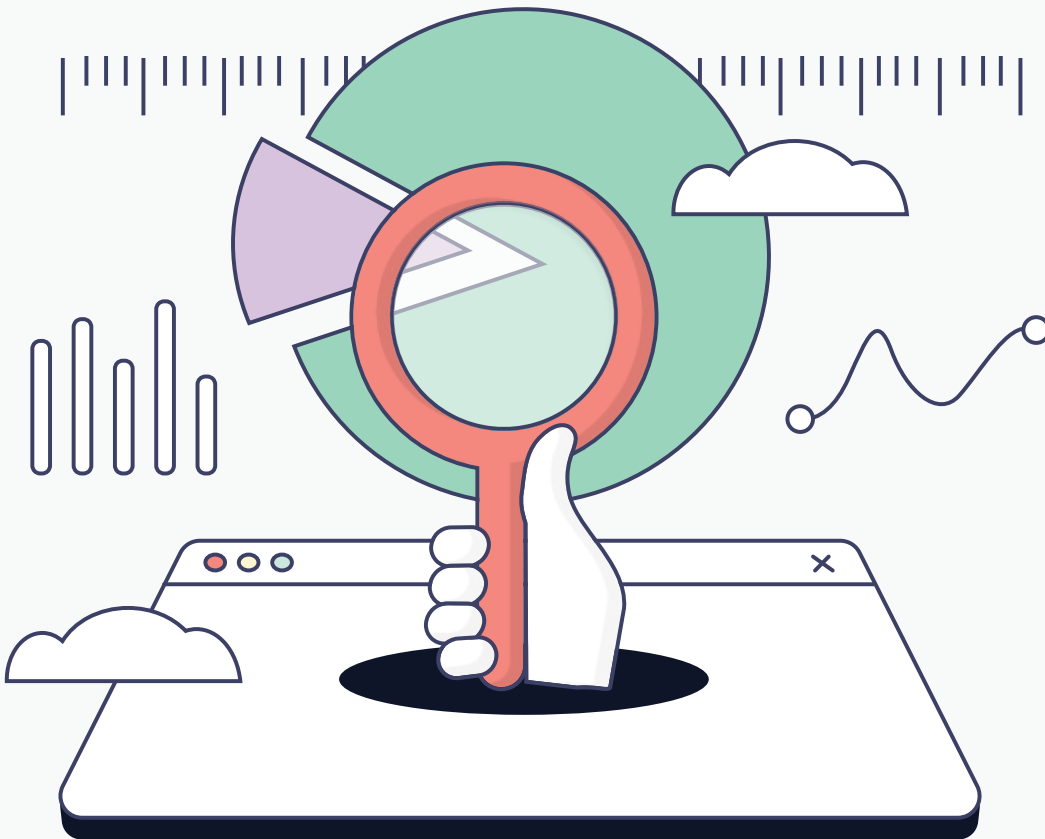
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Introduction

How much does user experience matter?

Well, to your website visitors it's everything. User experience (UX) encompasses the entire customer experience and every interaction they have while visiting your website. If that experience is good then it can lead to an increase in conversions and repeat visits. If it's bad, then you might just lose a customer for life. And when it comes to improving the user experience on your website, arguably one of the most critical elements is performance.

Performance relates to the speed of your website, namely how fast it loads and how quickly content gets rendered in a user's web browser. If it takes too long then your visitors are going to abandon your website before you even get the chance to show them your sleek new design. According to Think with Google, as page loading time goes from 1 second to 3s, the probability of a user bouncing increases 32%.

Given the importance of page performance to visitors we decided to analyze the performance of Fortune 500 websites to see what we could discover about the web experience of the most valuable companies in the world.

In the end we collected some useful information that sheds more light on performance, their tech stacks and more.

Our Research

We analyzed the Fortune 500 to uncover details about the technology stacks powering their websites and gain some insights into their performance. Using Google Lighthouse, we narrowed it down to the Top 50 fastest sites to see what was common among them.

Disclaimers

Test Setup

Performance tests were performed by running Google Lighthouse using Chrome's developer tools, an open-source, automated tool for improving web page quality.

Test Pages and Timeline

The home page of each website was tested and tests were conducted from March 26 2021 - May 21 2021

Variability

The variability of your overall Performance score and metric values is not due to Lighthouse. When your Performance score fluctuates it's due to changes in underlying conditions. Some of the common problems found include:

- A/B tests or changes in ads being served
- Internet traffic routing changes
- Testing on different devices, such as a high-performance desktop and a low-performance laptop
- Browser extensions that inject JavaScript and add/modify network requests
- Antivirus software

Performance Factors

Websites were audited across the following categories:

PERFORMANCE

Google Lighthouse provides a performance score which audits for the following metrics: First Contentful Paint, Time to Interactive, Speed Index, Total Blocking Time, Largest Contentful Paint and Cumulative Layout Shift.

Many of these metrics relate to the Core Web Vitals assessment which Google uses as a key SEO ranking factor.

Performance is based on a weighted average which provides a balanced representation of how performance is perceived by a user:

AUDIT	WEIGHT
First Contentful Paint	15%
Speed Index	15%
Largest Contentful Paint	25%
Time to Interactive	15%
Total Blocking Time	25%
Cumulative Layout Shift	5%

Performance metrics are reported in milliseconds after converting a raw metric value into a score from 0 to 100. According to Lighthouse, "scoring distribution is a log-normal distribution derived from the performance metrics of real website performance data on HTTP Archive."

SPEED INDEX

For part of our analysis we decided to focus on Speed Index, which measures how quickly content is displayed while a page is loading.

How does Lighthouse gather this data?

Tests are run from a server in the US. In order to ensure the realism and consistency of results, a throttled network connection is used to test pages. The connection uses a 1.6 Mbps bandwidth and 150ms server round-trip time for mobile devices.

ACCESSIBILITY

Accessibility determines common issues which might prevent a user from navigating a website and accessing its content. Accessibility scores are a weighted average of accessibility audits which assess factors such as Navigation, Names and labels, Contrast and Audio and video.

Accessibility is the concept of making a website usable by as many people as possible. It is a critical component for Google as they attempt to improve the online experience for all users. While accessibility traditionally refers to people with disabilities, it also includes people browsing the web on slower networks or using mobile devices.

The Web Content Accessibility Guidelines (WCAG) are the standard set of guidelines for making a website accessible. And while companies are expected to make their websites accessible as per the guidelines, there is currently no legal retribution for failing to comply. Yet the likelihood is that they will be such a legal requirement in the future.

BEST PRACTICES

Best practices take into account various factors including HTTPS usage and correct aspect ratio. It assesses how well a website is able to follow certain conditions that impact its code health. What is being done to make the page fast? How secure is the page? Does the page create a good user experience?

SEO

The SEO assessment determines the discoverability of a website. It assesses how well can search engines understand content and how well it's optimized to achieve an SEO ranking. Crawlability and mobile friendliness are just some of the factors that are considered.

PROGRESSIVE WEB APP (PWA) ELIGIBILITY

Lighthouse also assesses the PWA features of a website. PWAs continue to grow in importance in the modern web as users increase their use of mobile devices. With a PWA, a website loads quickly and also provides a native mobile application experience within a web browser.

The Lighthouse assessment determines if the website can load offline or under poor network conditions, if it's secure and if it still meets the best practices requirements outlined in other categories.

Executive Summary

While our research covers many facets of the digital presence of the Fortune 500, here are some of our key findings.

- WordPress powers over 40% of the internet, and when it comes to sites in the Fortune 500, it turns out that many of them indeed favor monolithic CMS platforms. Of the 340 sites that provided CMS data, 17.7% were powered by WordPress. Drupal and Sitecore powered another 17.7% each, with the majority, 32.6 %, powered by Adobe Experience Manager (AEM).

- EOG Resources, which was one of the best-performing sites alongside Alphabet, was built using Gatsby.

- Some of the slower Fortune 500 websites had Speed Index' ranging from 10.2s to 17.5s.

- 25 websites were found to be running on modern CMS / headless CMS technology. However, several others use monolithic suites.

- Of the 151 sites whose Web Framework could be determined, 83.4% use Microsoft ASP.NET, followed by Java Servlet (5.3%), and Next.js (4%).

- Fun fact: A great speed index can also be achieved by building a website with Microsoft Word, as demonstrated by Berkshire Hathaway.

STORYBLOK'S TAKE

Legacy systems and technologies are still widely used among the Fortune 500. This shows that there is plenty of room for future-proof technologies, such as the Jamstack, when it comes to speed and the ability to offer progressive web apps, and this is reflected in the scores we see below. Also, looking at the adoption of the Jamstack in the Web Almanac, approximately 0.9% of web pages are powered by the Jamstack. While this is an 85% increase YoY, it also shows the potential left for new technologies, such as the Jamstack & Headless CMS.

Despite the growth of the headless CMS market, headless technology adoption among the Fortune 500 is relatively low, although many may be deploying headless CMS to handle other parts of their digital presence.

The number of Fortune 500 companies with accessibility scores below 80 is alarming. It shows that more must be done to promote accessibility UI/UX best practices.

Analyzing the Fortune 500 start pages. Here's what we found.

PERFORMANCE ANALYSIS

Just as a quick reminder:
The Performance score is based on a weighted average to allow a balanced representation of how the performance is perceived by real users.

With that said, you can see in the chart below that 80.12% of all Fortune 500 websites have a Performance score of less than 50. On the other hand, only 2.28% of Fortune 500 websites have a score of 80 or higher.

When analyzing the Fortune 500 start pages, we've seen a range of performance results. Sure, we have to keep in mind that there's quite a bit of variability when it comes to the performance KPI of Google lighthouse tests. Nonetheless, it's a surprise to see a big percentage of start pages with a performance score of 50 or less.

This is relevant because Google will likely prioritize performance much more than other ranking factors in coming updates. The latest Google algorithm Update, Page Experience, will assess many of the key factors that contribute to the performance score, including Largest Contentful Paint (LCP) and Cumulative Layout Shift (CLS).

LCP measures how fast a page loads when a user enters a site, specifically the largest element, whether that be an image or video. CLS monitors the stability of a website, such as how items shift when a page is loading. With many of the Fortune 500 pages scoring so low it indicates that this could impact their Google rankings and ultimately the user experience Google so desperately wants webmasters to improve.

Performance
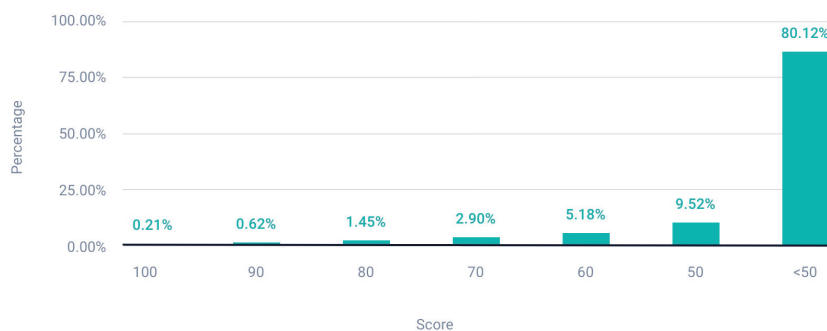
80% of websites have performance scores of less than 50

SEO ANALYSIS

Looking at the SEO score of Google Lighthouse Test, we can see that the majority of Fortune 500 websites have a score of 70 or higher, which generally speaking is a good sign (especially compared to the previous performance score).

It is also worth highlighting that 36% of analyzed start pages get a score of 90 or higher, which is a good sign for the organic visibility of those websites.

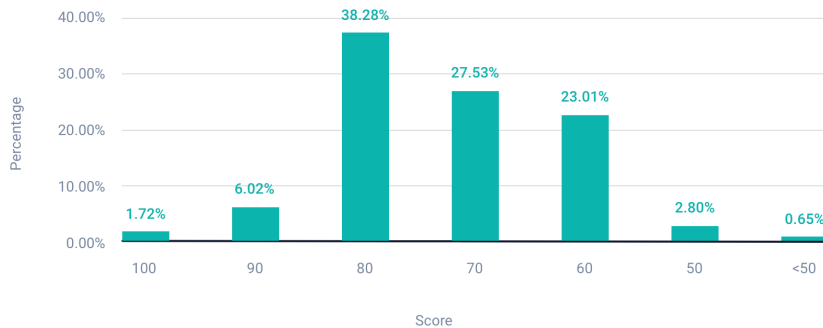### SEO
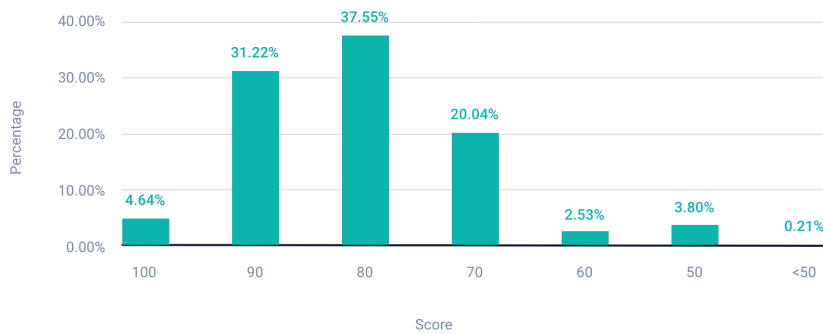
Only 36% of Fortune 500 websites don't need to improve their SEO scores

BEST PRACTICES ANALYSIS

As a quick reminder: The Best practice score takes various factors on security, page load, and user experience into account. To learn more about the best practices, visit the web.dev documentation here.

Best Practices

92% of Fortune 500 websites need to improve their website best practices.

Just under 8% of Fortune 500 companies have best practices scores of 90 or above. There is definite room for improvement but promisingly, almost two thirds of the companies on the Fortune 500 list have scores between 70 and 90.

These scores are adequate and it's likely that by following some of the Best Practices recommendations from Google including making start pages faster and more secure these companies can see significant improvements to reach the top level standard Google promotes.

OBSERVATIONS FROM THE TOP PERFORMING START PAGES

General Observations

- One of the top sites The #1 site in our total score index is Alphabet with a score of 372. Given that Alphabet's subsidiary Google created the Lighthouse scoring index, this was unsurprising.
- Over 80% of Fortune 500 sites have performance scores of less than 50.
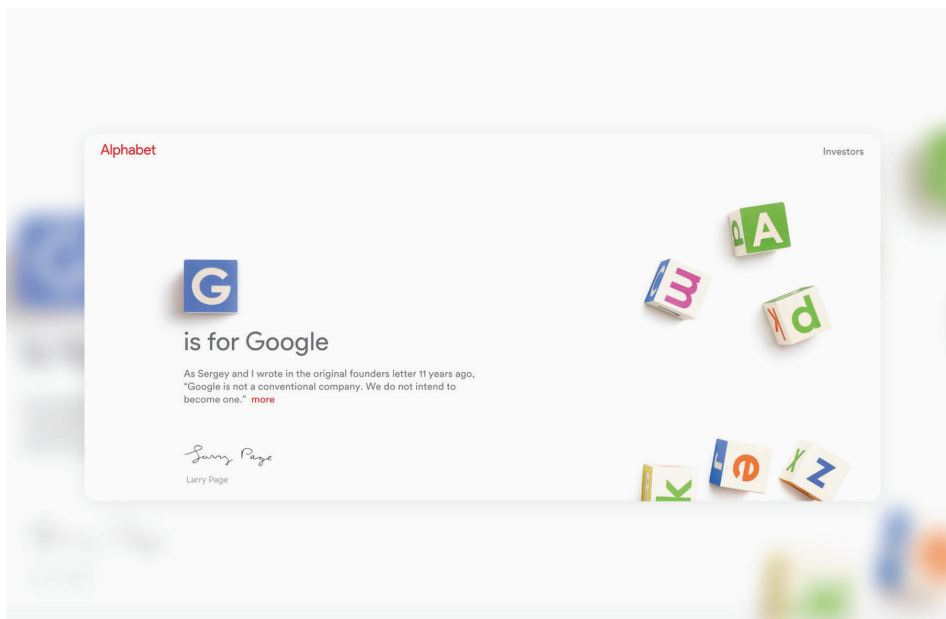
EOG Resources, which also scored 372, was built using static site generator Gatsby.
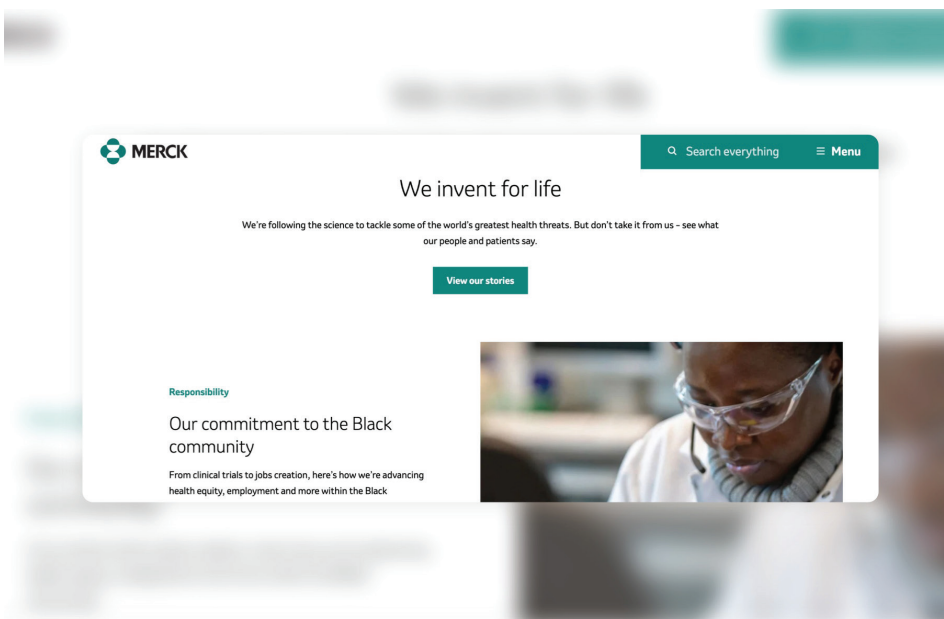
Design & UX

- Most of the top performing websites have easily scannable websites that are tailored for quick consumption of content.
- Clean navigation that enables users to quickly find what they're looking for and move around the websites are also common. For example, some websites feature their product line on the main landing page.
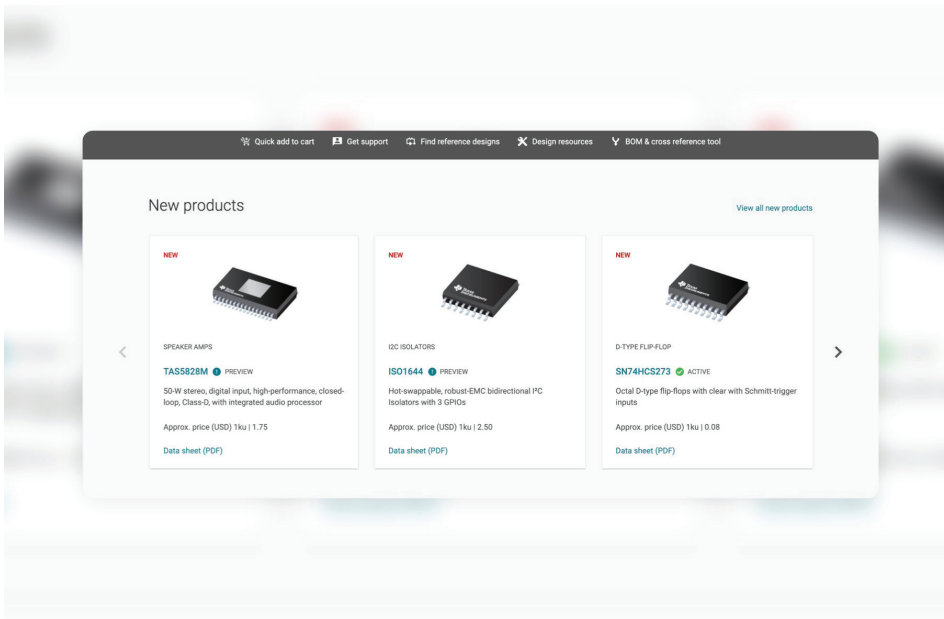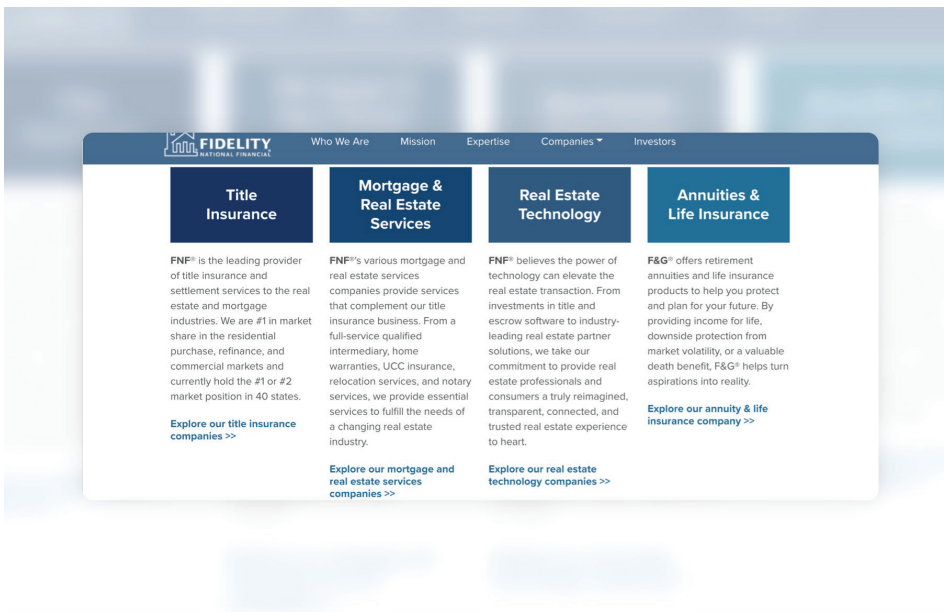
Texas Instruments features new products on the homepage.

- Start pages usually feature few words and lots of white space to help the user focus on one main idea.

Merck features tons of white space

- Websites in the insurance sector have the most text, favoring functionality over design.
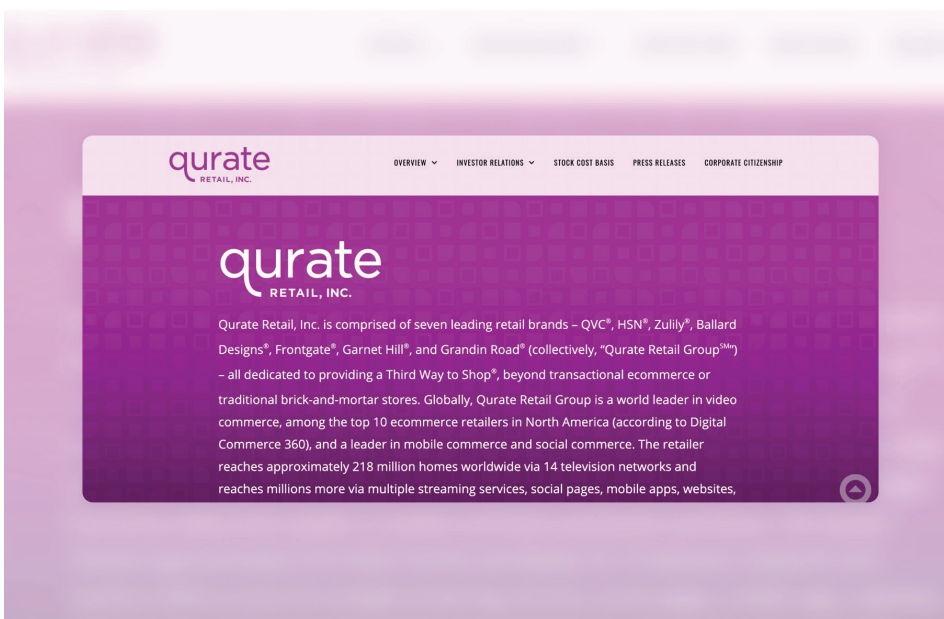
Fidelity's text heavy page

Content Management Systems

- WordPress is used in one way or another by 5 of the 25 of the top performing start pages we selected.
- 2 out of 25 of the top performing sites run on headless CMS platforms.
- A further 2 sites were built using the no-code tool Webflow.

STORYBLOK'S TAKE

Qurate Retail built using Webflow

The appearance of Webflow among the top 25 sites is indicative of the demand for no/low code and easy-to-use visual editing tools for marketers and non-technical staff within enterprise companies.

Content teams want to be able to autonomously write content, edit images, and modify web pages on the fly—and they want to do it all quickly. We forecast that many more Fortune 500 companies will adopt visual editing technologies in coming years to meet their own internal demand. At Storyblok, we believe that modern CMS technologies need to provide both developers as well as editors all the easy-to-use tools they need to run their content operations and websites.For example, large companies such as UPC Business have used Storyblok and its editor-friendly features to streamline editor workflows and get content out faster.

A worrying trend however is how many websites scored poorly in performance and at the very least need to improve their SEO and Best Practices scores. According to Lighthouse, scores of 90 and above in any category are considered good. Scores between 50 and 89 need improvement and any score under 50 is considered poor.

Lighthouse reports provide recommendations and opportunities that Fortune 500 businesses can use to improve their scores including avoiding multiple page directs, providing SEO descriptions for links and images or ensuring that a website is HTTPs secure.

## OBSERVATIONS FROM THE SLOWEST WEBSITES

- The bottom 25 slowest Fortune 500 websites have Speed Index' ranging from 5.5s to 17.5s.
- In contrast, the top 50 fastest sites had a page speed index of 1s or less.
- 8 out of 25 websites have performance scores of < 10
- Most websites (8 out of 25) use Adobe Experience Manager.
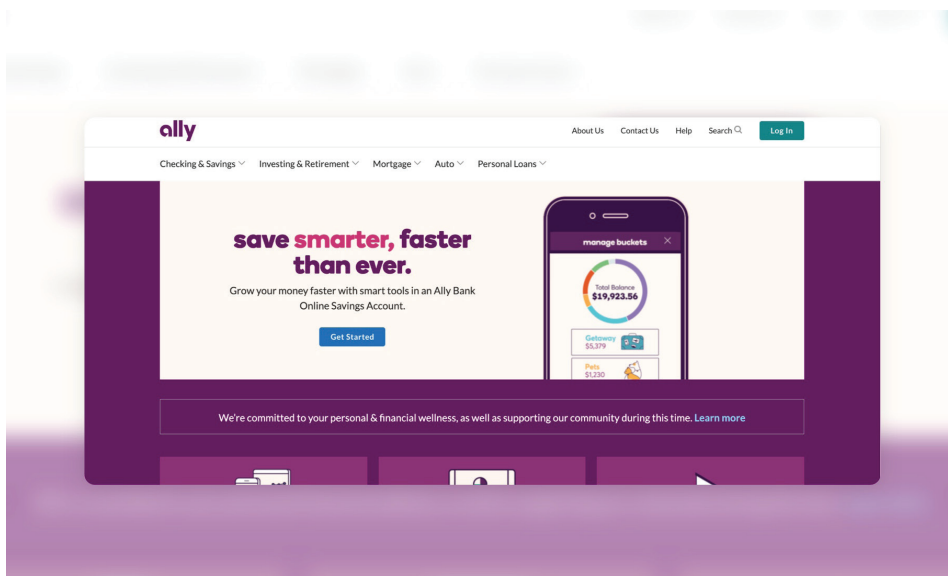
Ally Financial with a Speed Index of 17.5s is the slowest website.

Design & UX

- Most of the slowest performing websites are image heavy.
- Other multimedia types such as video and GIFs are also featured on the slowest websites.
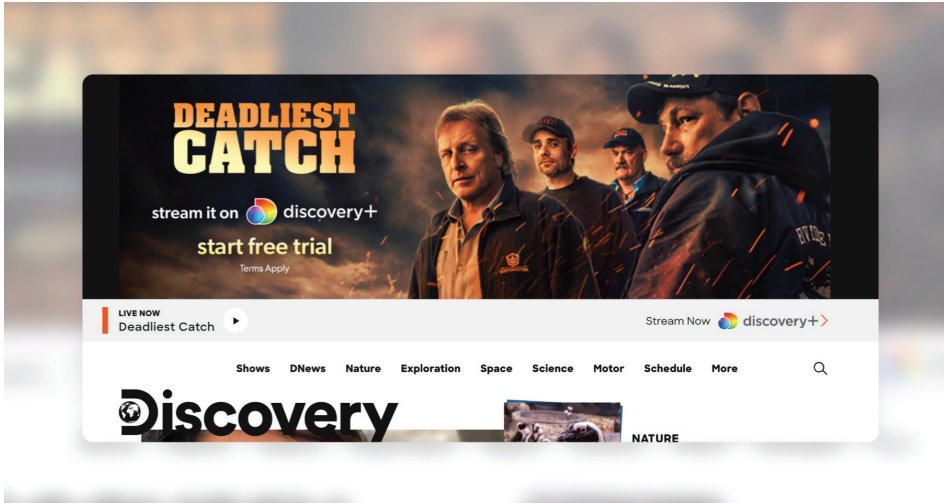
Discovery features tons of images and video that slow down loading times.

Storyblok's Take

Lighthouse considers any speed index that is higher than 5.8s to be a slow website. A speed index of 3.4s or under is considered fast and between 3.4 and 5.8 considered moderate. Speed is paramount for today's consumers and it seems as if the majority of Fortune 500 sites are within the fast threshold or at least have a satisfactory score.

To get these websites up to speed, technologies such as the Jamstack & Headless CMS support enterprises on their path to better performing websites. With Jamstack, static sites and the benefits that come with them are returning to the fold. Static sites are faster, more secure and more easily scalable than dynamic websites since they don't require a dedicated webserver to function. Jamstack can also enable static sites to serve as more than just simple websites by using APIs to connect to third-party services and more. But those are only some of the benefits of Jamstack and what makes it popular with developers.

To learn more about how to future proof your website, please find the following resources below:

- Jamstack explained
- Headless CMS explained

Also, for image-heavy sites, Storyblok can solve this problem with our out-of-the-box image service, enabling you to resize images quickly and provide your customers with a better experience.

Most Accessible Fortune 500 websites

Accessibility scores are based on a weighted average of accessibility audits. Unlike other scores, these audits are performed using a pass-fail method. The following 27 sites achieved perfect Accessibility scores of 100.

RANKING	COMPANY NAME	URL
1	Republic Services	http://www.republicservices.com
2	Principal Financial	http://www.principal.com
3	JPMorgan Chase	http://www.jpmorganchase.com/
4	Morgan Stanley	http://www.morganstanley.com/
5	Voya Financial	http://www.voya.com
6	Assurant	http://www.assurant.com
7	L Brands	http://www.lb.com
8	Erie Insurance Group	http://www.erieinsurance.com
9	Navient	http://www.navient.com
10	CBRE Group	http://www.cbre.com/
11	American Tower	http://www.americantower.com
12	Ally Financial	http://www.ally.com
13	Hartford Financial Services	http://www.thehartford.com/
14	Thrivent Financial for Lutherans	http://www.thrivent.com
15	NetApp	http://www.netapp.com
16	Weyerhaeuser	http://www.weyerhaeuser.com
17	KeyCorp	http://www.key.com
18	Jabil	http://www.jabil.com/
19	Macy's	http://www.macysinc.com/
20	Genworth Financial	http://www.genworth.com

21	Progressive	http://www.progressive.com/
22	PayPal Holdings	http://www.paypal.com
23	Expedia Group	http://www.expediagroup.com
24	iHeartMedia	http://www.iheartmedia.com
25	Clorox	http://www.thecloroxcompany.com
26	Fidelity National Financial	http://www.fnf.com
27	USAA	http://www.usaa.com

ACCESSIBILITY ANALYSIS

Accessibility scores are calculated based on a weighted average of accessibility audits. However, unlike performance scores, these audits are graded as pass or fail and there are no points for partially passing an audit.

Per the chart below 45% of Fortune 500 sites have good accessibility scores and less than 1% have scores under 50 which would be considered poor.

Best Practices

45% of Fortune 500 websites have good accessibility scores

ANALYZING THE MOST ACCESSIBLE WEBSITES

Just 27 out of the Fortune 500 have website accessibility scores of 100. Yet, despite being accessible, performance remains an issue for many of these accessible websites, with none of them showing a page speed score higher than 72. Balancing accessibility with site speed is something that brands must focus on, as a slow-loading website could disqualify itself from being labelled accessible as other web experiences speed up.
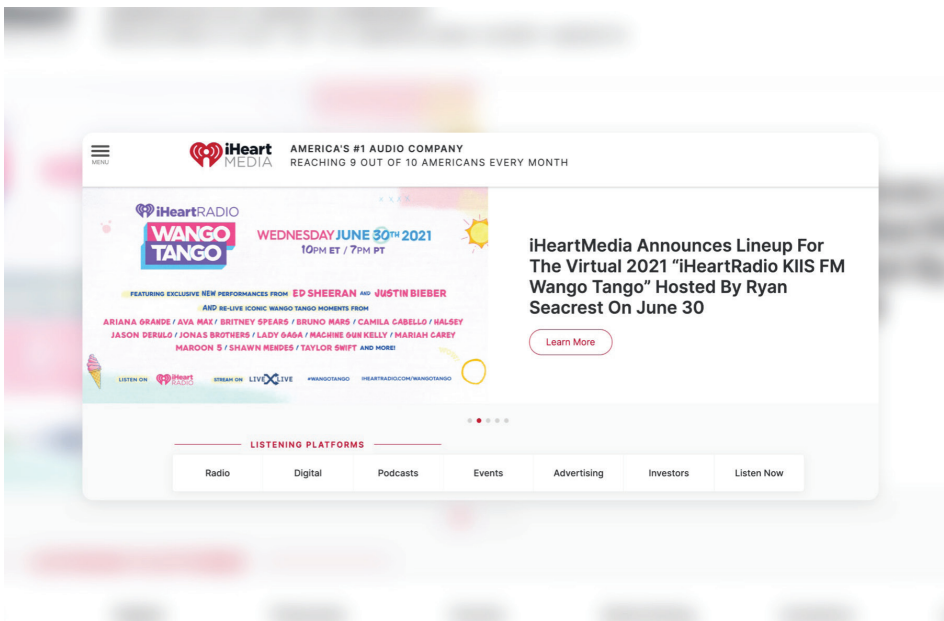
iHeartMedia scored high in several others categories

Design & UX

Most websites feature a minimalistic design with one hero banner and a clear message that focuses the user's attention. Call to action buttons are also used in typical fashion, with very little deviation from what a website "should" look like.

For instance, very few sites feature GIFS or irrelevant images and sliders that might distract the user.
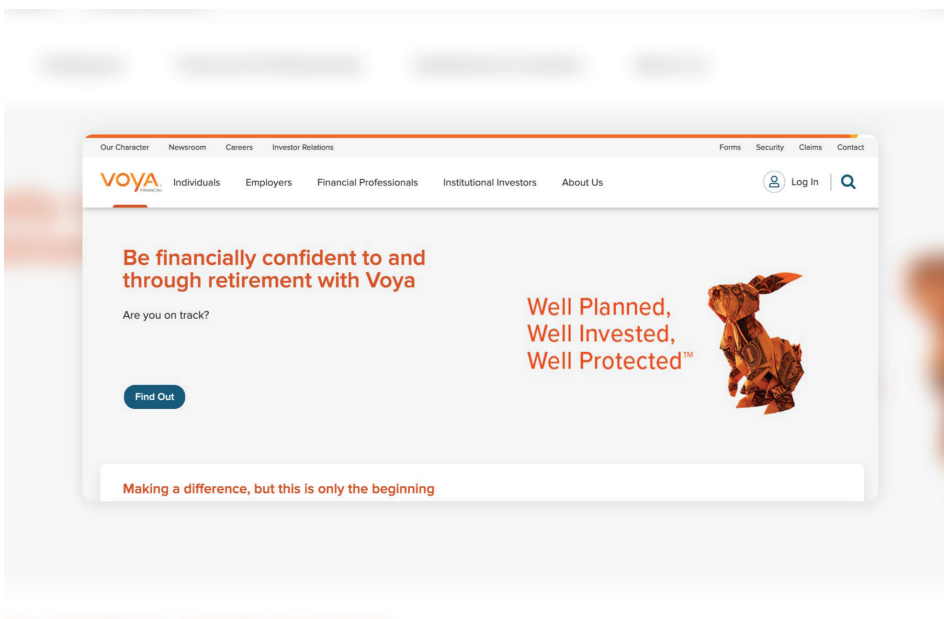
Voya's minimalist design

CMS

Just three websites are powered by headless CMS platforms (Magnolia, Bloomreach, Kentico). Other interesting CMS choices among the Fortune 500 include concrete 5 and Percussion. Otherwise, Adobe AEM and Sitecore make up a sizable chunk of the CMS' used.
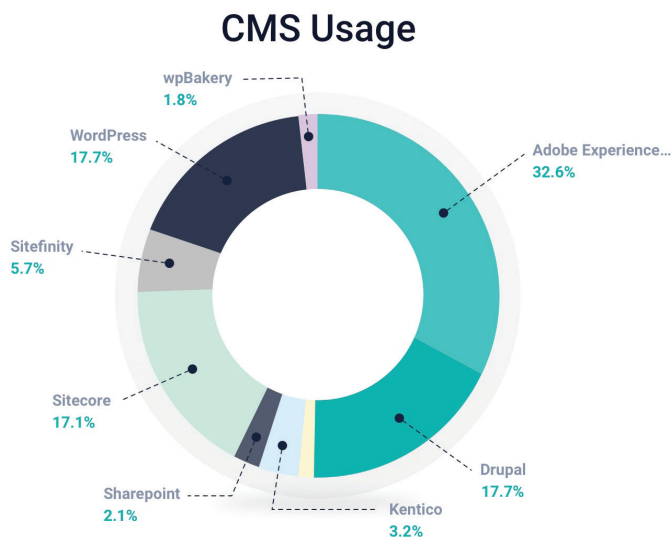
Storyblok's Take

WCAG is the legal requirement that a website must be made accessible. However, a high accessibility score does not mean that a website and its content are compliant. In the United States, WCAG isn't a legal requirement for all websites.

Still, when it comes to the customer experience, having a good accessibility score is an indication that Fortune 500 companies have taken important steps to ensure that everyone is able to access content and navigate their websites.

Content Management Systems

We also assessed the content management systems used by the Fortune 500 websites, along with other general tech assessments. The type of CMS chosen can have an impact on the performance of a website and how well a company is able to meet the demands of changing user preferences regarding personalization, localization and more. It also impacts the type of digital experiences that can be delivered to compliment the website.

CMS Usage

- wpBakery 1.8%
- WordPress 17.7%
- Sitefinity 5.7%
- Sitecore 17.1%
- Sharepoint 2.1%
- Kentico 3.2%
- Drupal 17.7%
- Adobe Experience… 32.6%

- Of the 340 sites that provided CMS data, only 17.7% were powered by WordPress. Drupal and Sitecore powered another 17.7% each, with the majority, 32.6 %, powered by Adobe Experience Manager (AEM).
- 25 websites were found to be running on modern CMS / headless CMS technology: Platforms accounted for included: Kentico, Magnolia, Brightspot, Bloomreach, Liferay, Craft and Contentful.

Storyblok's Take

Despite many labelling PHP as dead, according to W3Tech, PHP is still used by 79.2% of all websites with a known server-side language.

Java also remains a popular programming language used among established enterprise-level organizations such as the members of the Fortune 500. High-risk companies such as those in investment banking rely heavily on Java for safety and security.

Many Fortune 500 websites continue to run on .NET and there are very few modern CMS platforms being used. Instead, companies are relying on either legacy platforms like WordPress or Drupal and expansive suites like Adobe and Sitecore to power their websites.

Given the vast size of any Fortune 500 company it's likely that while they recognize the benefits of a headless or modern web CMS over a legacy or suite platform, there are so many connected parts that it's difficult to replatform to another CMS. However, as more digital channels continue to emerge it's likely that this will change in the near future.
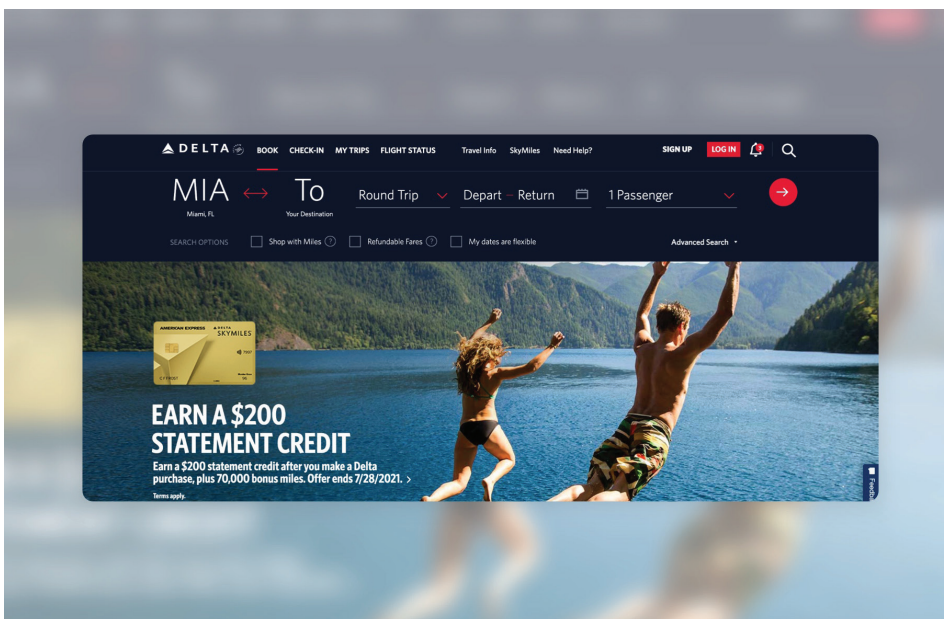
Fun Findings

1. BERKSHIRE HATHAWAY'S MICROSOFT WORD WEBSITE
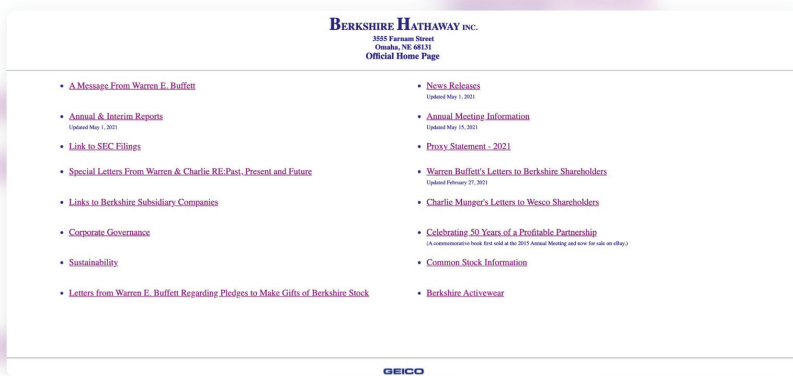
BERKSHIRE HATHAWAY INC. from Warren Buffet has a fantastic Speed Index, and the site was built with MSHTML 8.00.6001.18828

According to this Quora answer, the site was built between 1997 and 2003 with Microsoft Word.

## 2. THE AIRLINE INDUSTRY REFUSES TO TAKE OFF

Delta Airlines has a website performance score of 1

The top airline carriers within the United States feature prominently in the Fortune 500 list. However, all of their websites have shockingly low performance scores, making up much of the top 15 slowest-loading websites; Delta Airlines (1), Southwest Airlines (2), United (2), American Airlines (13), Jetblue (15). These low scores are likely as a result of the type of content found on these websites. With home pages filled with images as well as the features for searching and booking flights.

3. POOR PWA SCORE INDICATES AN OUTDATED WEBSITE

Websites with PWA scores of 1 out of 8 look quite similar to the Berkshire Hathaway website, which also has a score of 1 out 8. Since a PWA refers to a website that looks and feels like a native mobile application it could indicate that these websites lack the modern user experience that users have come to expect from websites updated for more frequent interactions with a mobile-first audience.
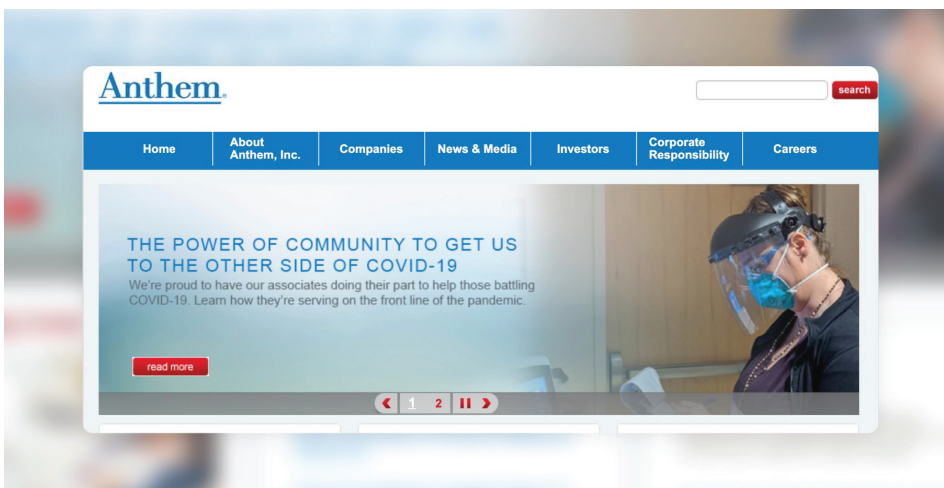
The Anthem website looks outdated by modern standards

Some of these websites don't have the sleek and user-friendly look and feel of modern websites.
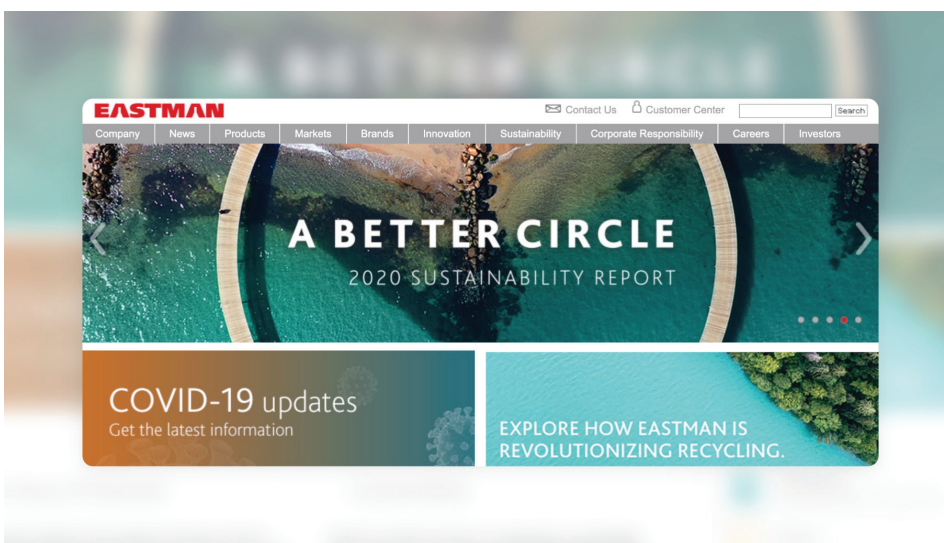
The Eastman website is also outdated by modern standards

Improve your site performance with Storyblok

Many of the Fortune 500 are struggling to lower speed scores, which is a key benchmark for Google's search engine bots as well as human web surfers who have historic disdain for slow-loading web pages.

Today, medium and large companies are increasingly turning towards lightweight technologies that can produce lightning-fast experiences without compromising on functionality, image quality or video quality.

The practice of combining JavaScript, API-driven content management systems, and Markdown (most commonly referred to as a Jamstack), is becoming the norm. Small business financial platform Fundbox migrated their website to Jamstack to not only modernize it but also improve performance. They chose Storyblok as the headless CMS because it provided support for Jamstack and modern frameworks like Nuxt and Vue, allowed them to preview content before publishing and gave easy workflows for the content and marketing teams.

Not to mention, the platform was fast when it came to content delivery and deployment. Now the Fundbox team can build websites in record time without any workflow issues.

Read More: How Fundbox made the switch to Storyblok

Storyblok is an enterprise CMS solution built for modern consumer expectations. If you're an enterprise and you want to improve your digital experience in line with modern benchmarks like Lighthouse, talk to us. But first, read our whitepaper: An Enterprise Navigator's Guide into making CMS decisions: How to choose a CMS that's right for your enterprise.

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Your Headless CMS

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