



Optimization for Core Web Vitals

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A modern interior scene with a wooden sideboard, framed art, and a potted plant. The sideboard is a long, low-profile piece with multiple drawers and a flat top. On top of it are several decorative items: a large vase with greenery, a small framed picture, and two ceramic vases. On the wall above the sideboard are three framed pictures of different sizes. To the right, a tall, thin metal stand holds a large, round, light-colored pot with a bare, branching plant. The floor is made of light-colored wood planks. The entire scene is overlaid with a semi-transparent blue filter.

User Story

As a customer, I want...

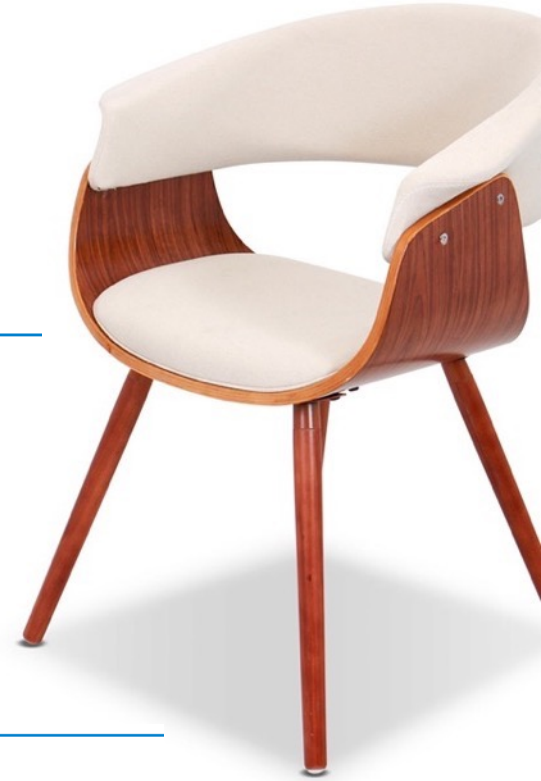
- The page I am visiting to load quickly
- To have a positive experience viewing and purchasing furniture online

As a retailer, I want...

- Fast loading speeds for my customers
- To ensure a positive web experience

As a developer, I want to...

- Optimize the experience for customers
- Make sure that loading times are fast



A modern interior scene with a wooden sideboard, framed art, and a potted plant. The sideboard is a long, low-profile piece with multiple drawers and a flat top. On top of it are several decorative items: a large vase with greenery, a small framed picture, and two ceramic vases. On the wall above the sideboard are three framed pictures of different sizes. To the right, a potted plant sits on a tall, thin metal stand. The floor is made of light-colored wood planks. The entire scene is overlaid with a semi-transparent blue filter.

Definitions

What are Core Web Vitals?

WEB VITALS

- **Web Vitals:** an initiative by Google to provide unified guidance for quality signals that are essential to delivering a great user experience on the web

CORE WEB VITALS

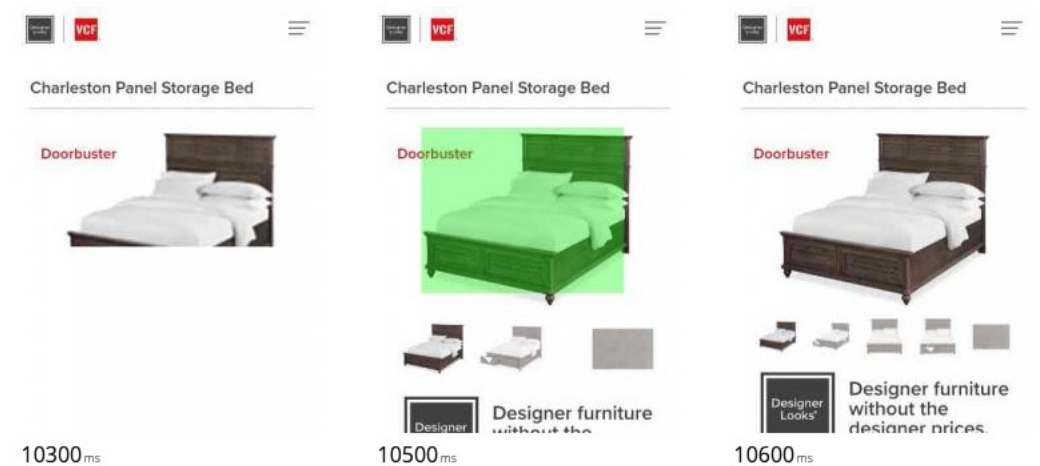
- **Core Web Vitals:** the subset of Web Vitals that apply to all web pages, should be measured by all site owners, and will be surfaced across all Google tools

METRICS

- Largest Contentful Paint (LCP)
- First Input Delay (FID)
- Cumulative Layout Shift (CLS)

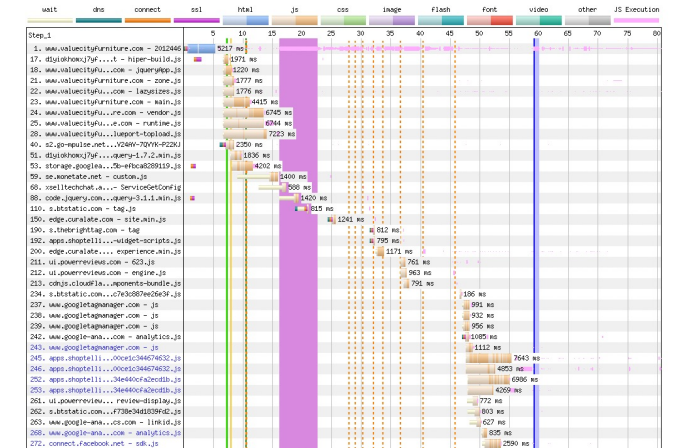
Largest Contentful Paint

- Marks the perceived load speed
- The point in the page load timeline when the page's main content is loaded
- LCP must be 2.5s or less to be considered good



First Input Delay

- Measures the time from when a user first interacts with a page to when the page is responsive to user events
- Time until the site is usable
- Closely related to Total Blocking Time (TBT) which is a measure of how much time a browser is blocked by scripts — developers focus on improving TBT since FID is hard to measure in tests



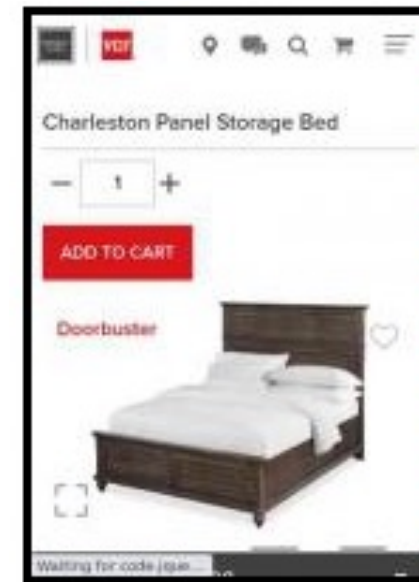
(Interactivity)

FID
First Input Delay



Cumulative Layout Shift

- Measures visual stability
- Quantifies how much users experience unexpected layout shifts
- Want to make sure the user has a pleasant and predictable experience on the page



50%



82%

A modern interior scene featuring a light-colored wooden sideboard with four drawers and two doors. On top of the sideboard are a large glass vase with greenery, a small framed picture, and two ceramic vases. Above the sideboard are three framed pictures. To the right, a potted plant sits on a metal stand. The floor is made of light-colored wood. The entire scene is overlaid with a blue gradient.

Importance

User experience

- Best way we can measure the performance of our sites
- Gives us quantitative metrics of experience
- Users will leave a site that loads slowly or does not behave as they expect
- Improving performance increases retention rates

Clients

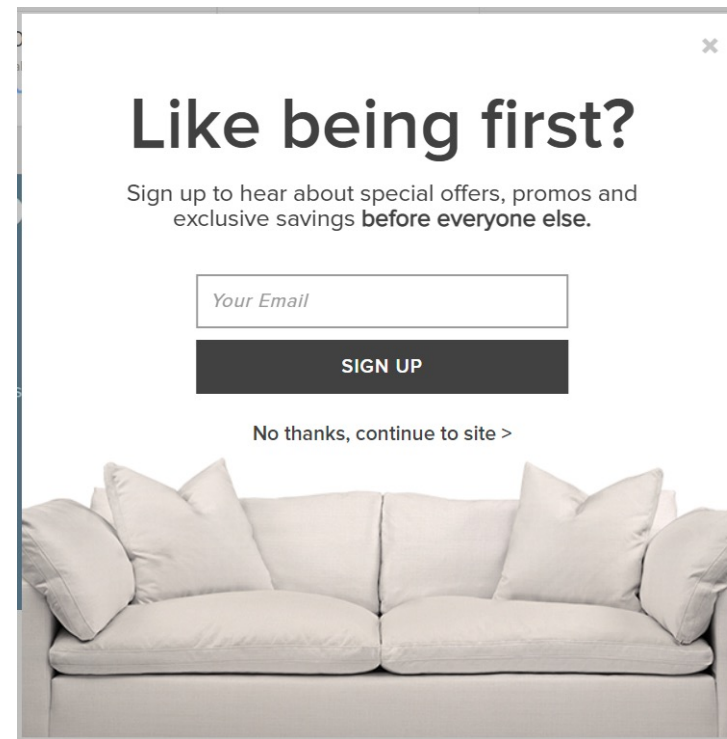
- Clients regularly look at core web vitals to understand the experience we provide to users
- Want metrics that accurately demonstrate a positive user experience
- Demonstrate our performance progress to clients through improvements in web vitals
- Optimizing for core web vitals improves Search Engine Optimization (SEO) ranking

The background image shows a contemporary living room. On the left, a light-colored wooden sideboard with four legs holds a large vase of red flowers, a small framed picture, and two ceramic vases. Above the sideboard are three framed artworks. To the right, a tall, thin metal stand holds a large white pot with a bare, sculptural plant. The floor is made of light wood planks, and a window with sheer curtains is visible on the far right. The entire scene is covered with a semi-transparent blue gradient.

Progress

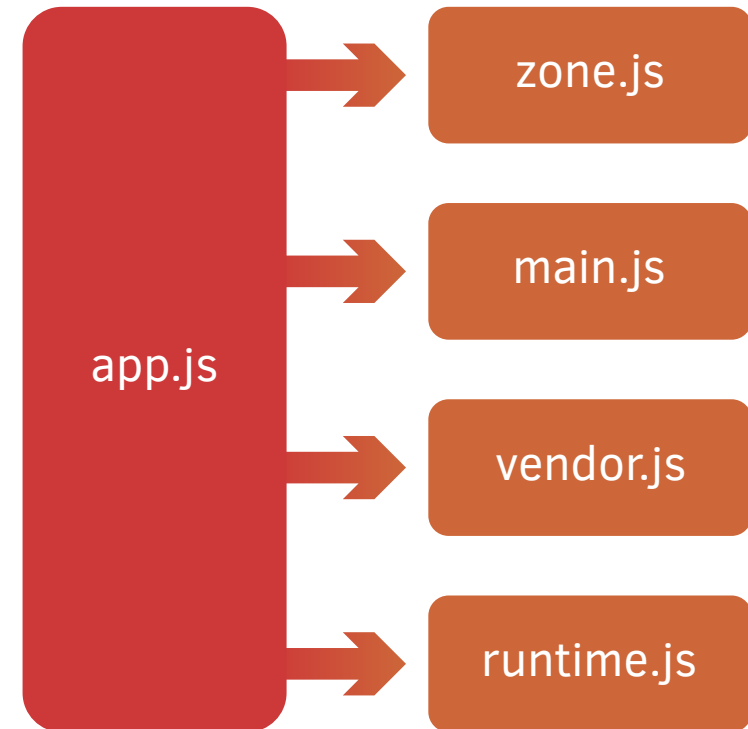
Deferring email signup popup

- Email signup popup was the cause of LCP
- Prior to this ticket, LCP was around 93s for ASI
- Deferred the load of the lightbox until a customer first interacts with the page
- Dropped ASI's LCP to around 10s
- Did similar work for STN



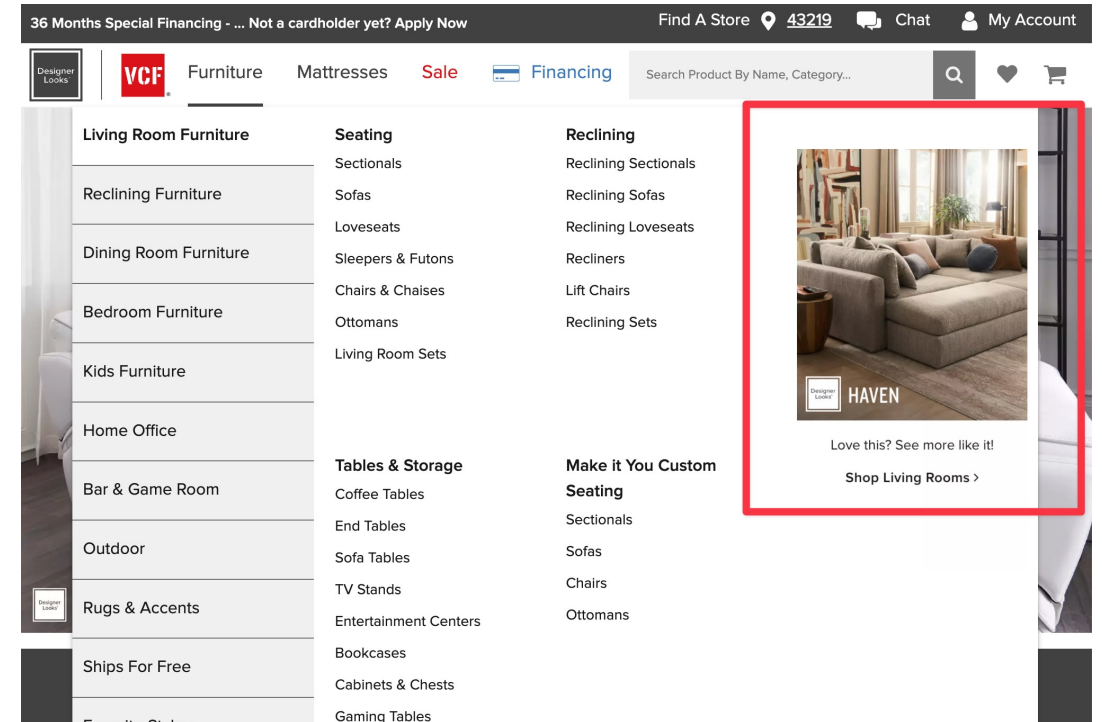
Code splitting

- Break up application into separate bundles so they can load simultaneously
- Broke app.js into zone.js, runtime.js, main.js, and vendor.js
- Reduced TBT by an average of 52%



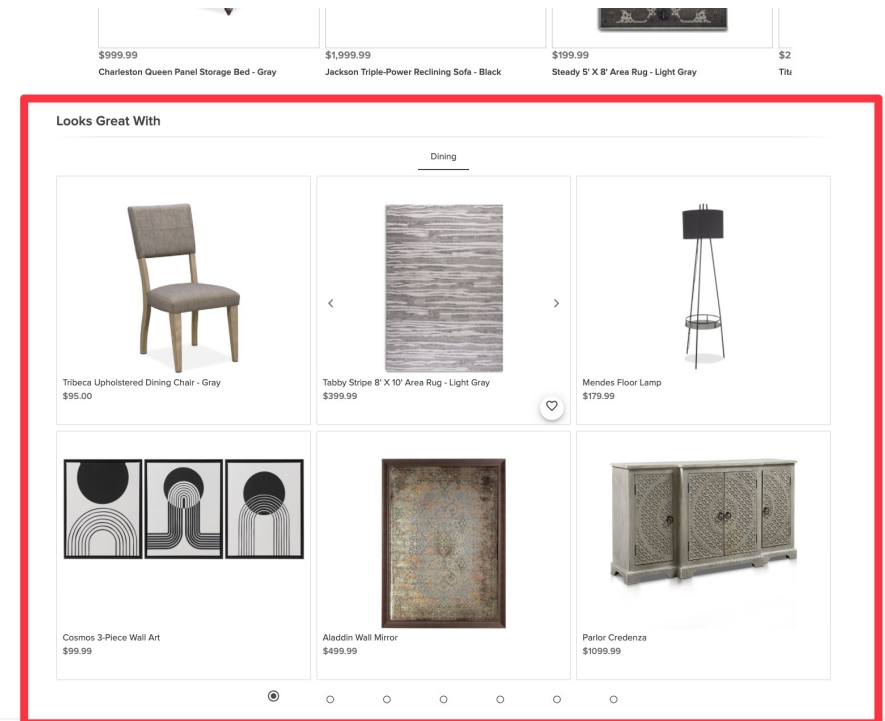
Lazy loading menu page elements

- Page elements are present in the menu and contain large images
- Deferred the loading of these page elements until a user opens the menu
- Did similar work with deferring the footer until a user scrolls (BLUE-36180)



Deferring Shoptelligence

- Loads on the bottom of ASI's PDP
- Is the largest cause of TBT
- Deferred it until user scrolls which improved TBT by about 36%

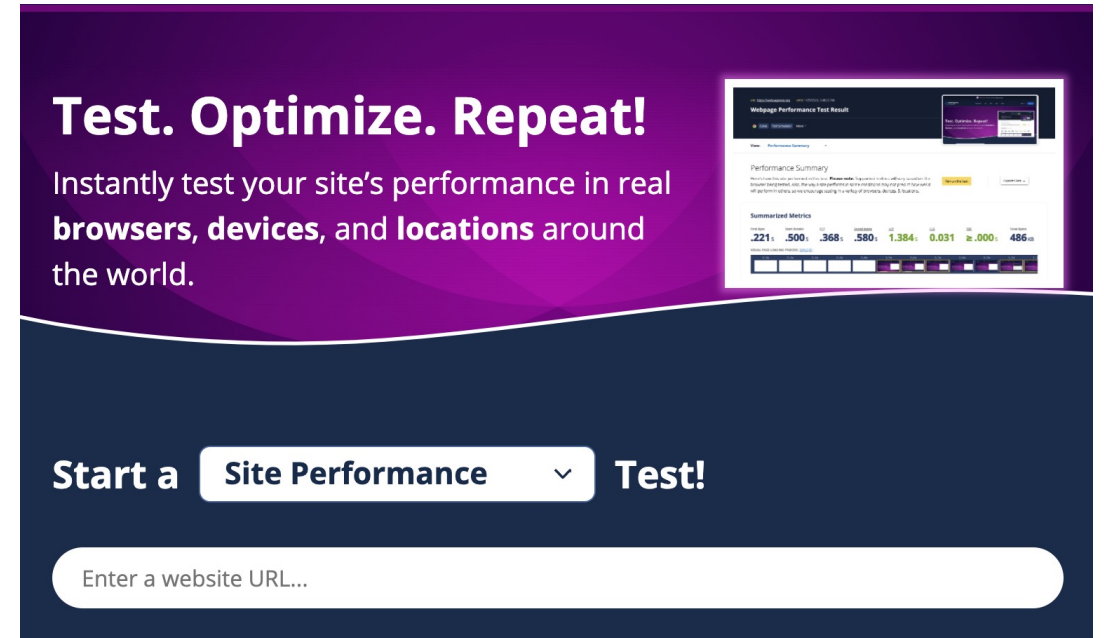


The background image shows a contemporary living room. On the left, a light-colored wooden sideboard with four drawers and four legs holds a large vase of red flowers, a small framed picture, and two ceramic vases. Above the sideboard are three framed artworks. To the right, a tall, thin metal plant stand holds a large, leafless branch in a white pot. The floor is made of light-colored wood planks. The entire scene is covered with a semi-transparent blue gradient.

Testing

Running a performance test

- We use WebPageTest, an open-source web page performance testing tool recommended and used by Google
- Run and read tests manually on WebPageTest site but automated performance testing is coming soon
- For specific feature testing, run baseline test and then deploy and rerun test





Questions?

