Discovering the next big perf opportunities

NY Web Perf Meetup Group

August 24, 2022

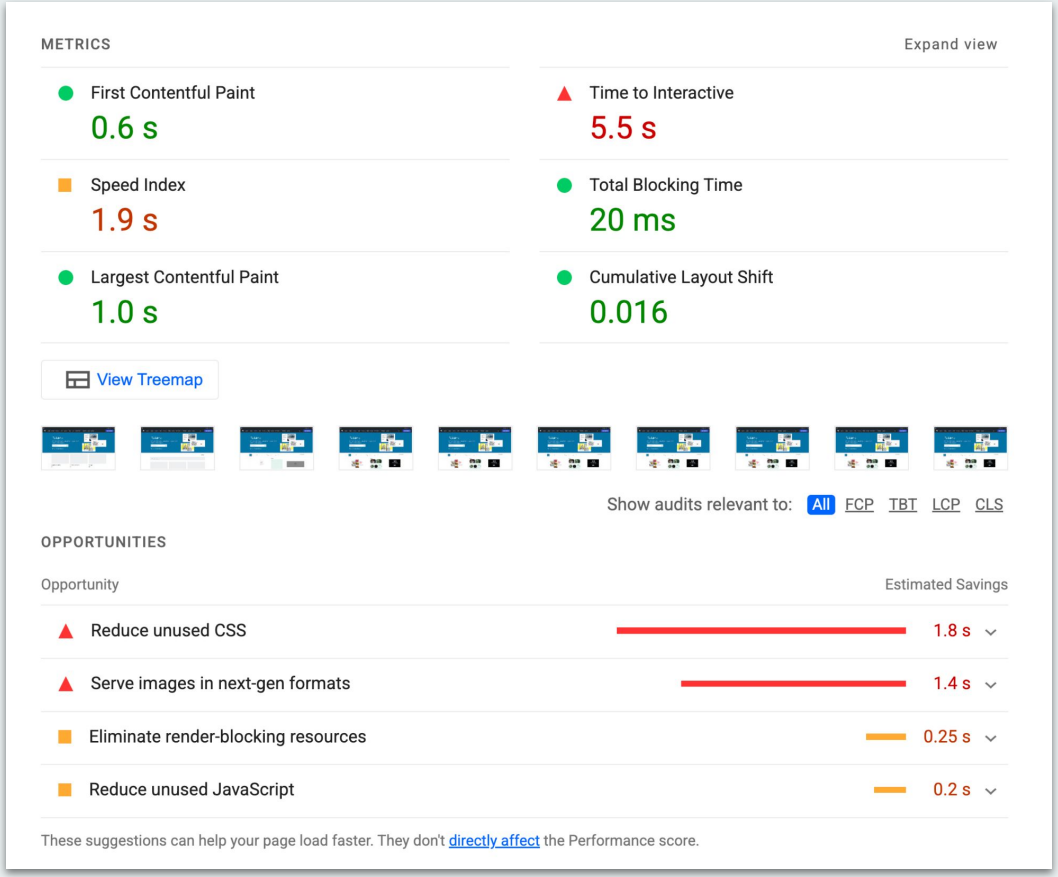
Rick Viscomi

@rick_viscomi

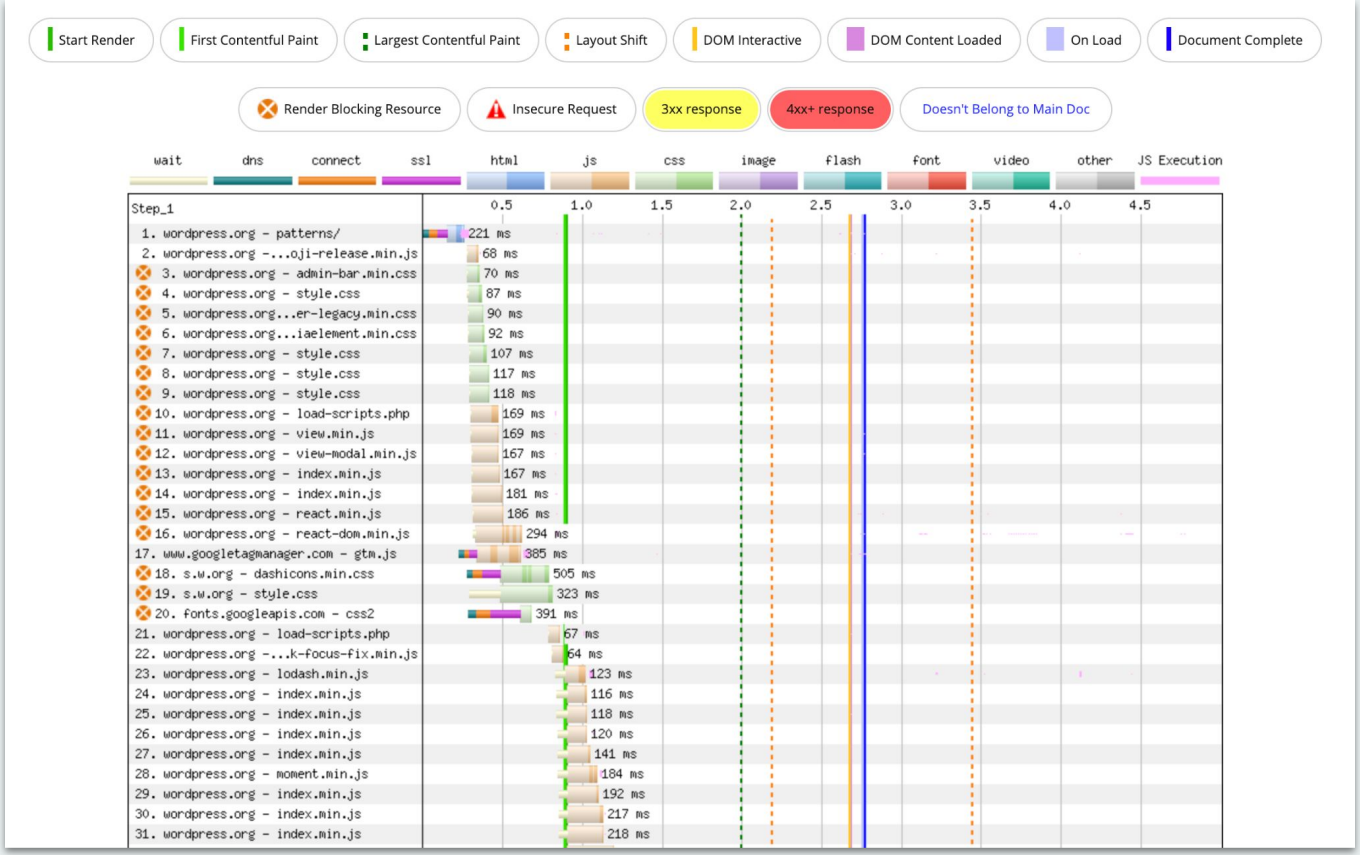
Developer Relations Engineer, **Google**

- **Core Web Vitals**
- **Chrome UX Report**
- **HTTP Archive**

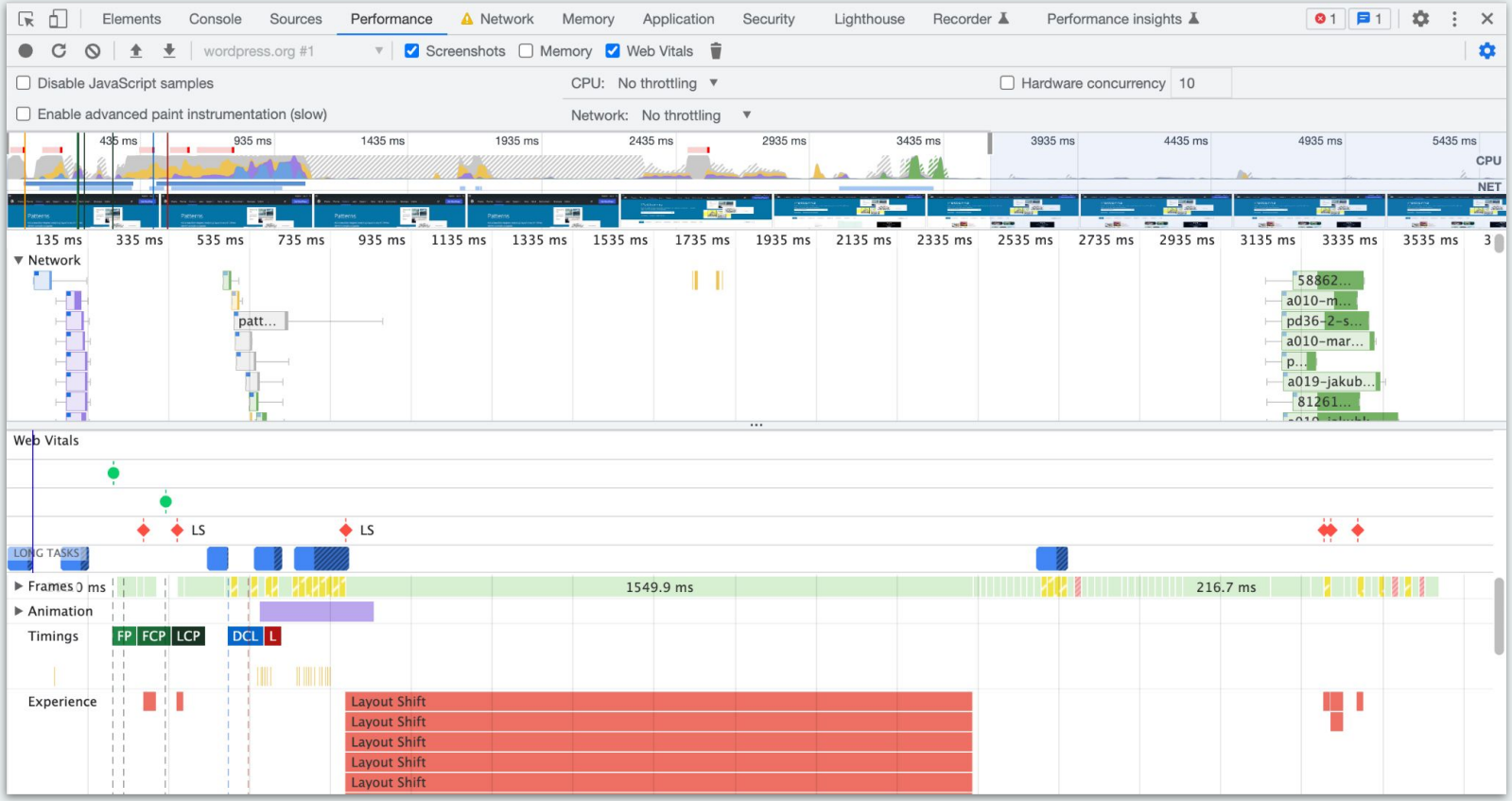
Speeding up a website



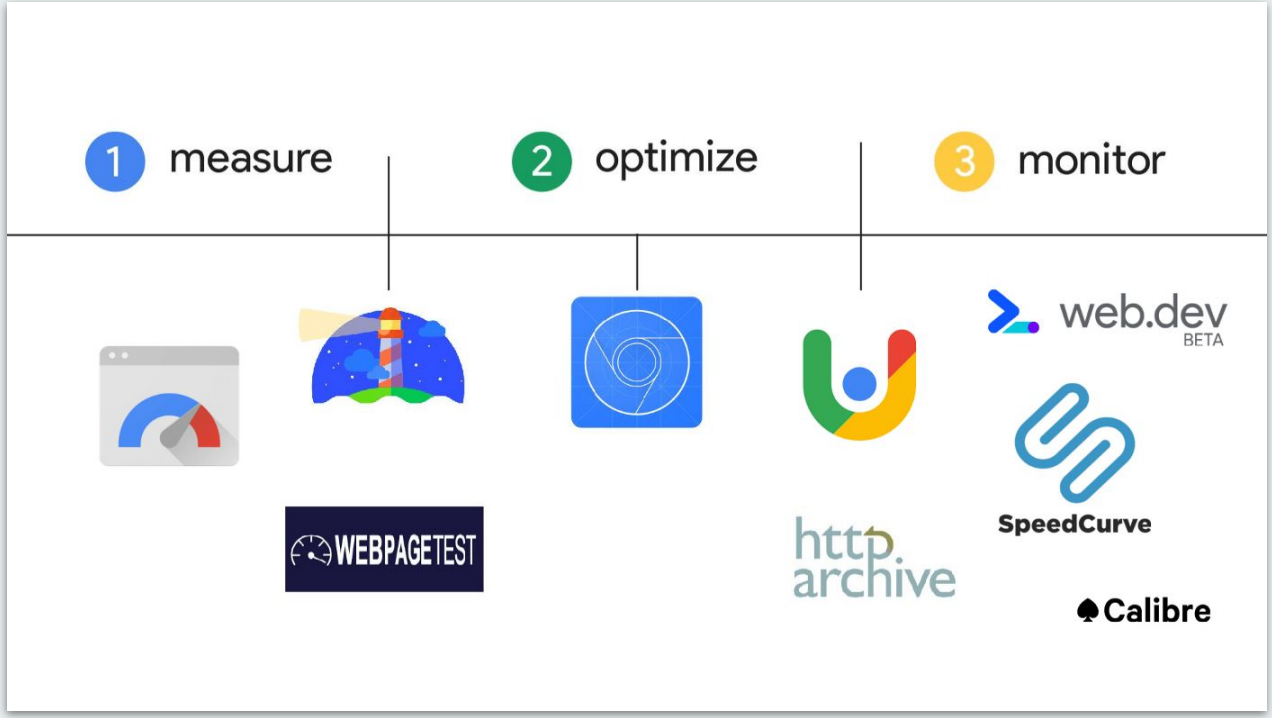
Curated opportunities in Lighthouse



Full <body> scan in WebPageTest



Detailed telemetry in Chrome DevTools Performance panel



bit.ly/addy-mom

Speeding up the web

Faster page loads using server think-time with Early Hints

Find out how your server can send hi

Published on Thursday, June 23, 2022

Kenji Baheux

Kenji is a product manager on th

bit.ly/chrome-early-hints

web.dev/priority-hints

Optimizing resource loading with Priority Hints

Priority hints indicate the relative priority of resources to the browser. They can enable optimal loading and improve Core Web Vitals.

Oct 20, 2021 — Updated Mar 8, 2022

Leena Sohoni

Twitter

Addy Osmani

Twitter GitHub

Patrick Meenan

Twitter

Back/forward cache

Optimize your pages for instant loads when using the browser's back and forward buttons.

Nov 10, 2020 — Updated Jul 18, 2022

Philip Walton

Twitter GitHub Homepage

Barry Pollard

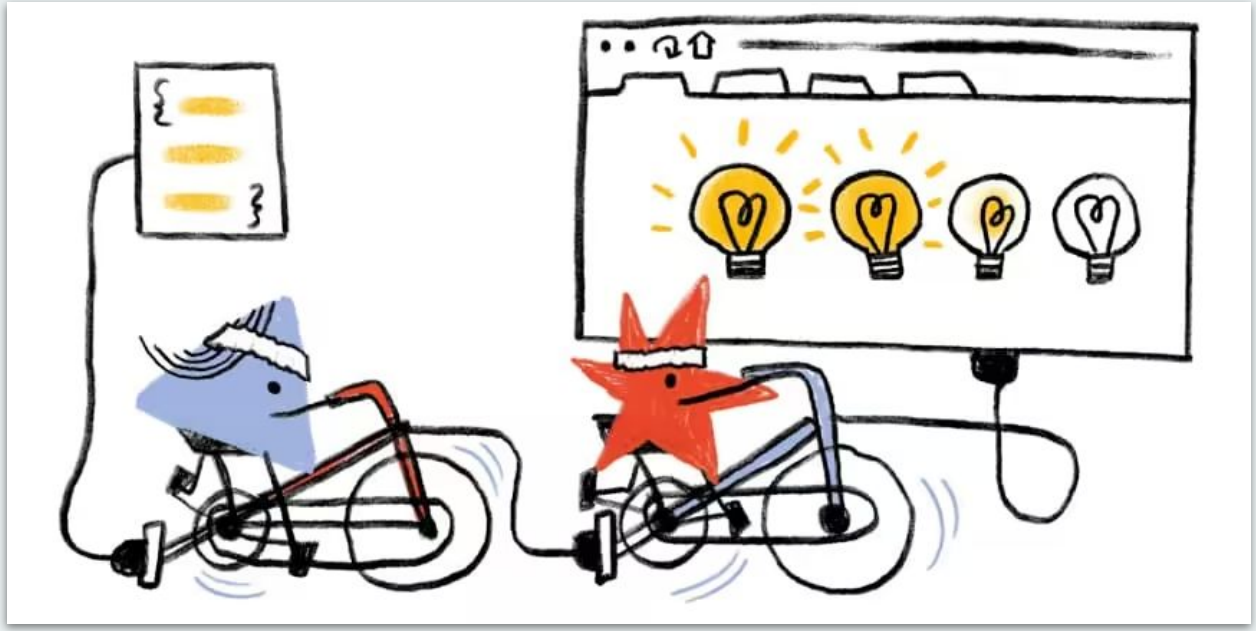
Twitter GitHub Homepage

web.dev/bfcache

"Chrome continues to get faster on Android as well. Loading a page now takes 15% less time, thanks to prioritizing critical navigation moments on the browser user interface thread."

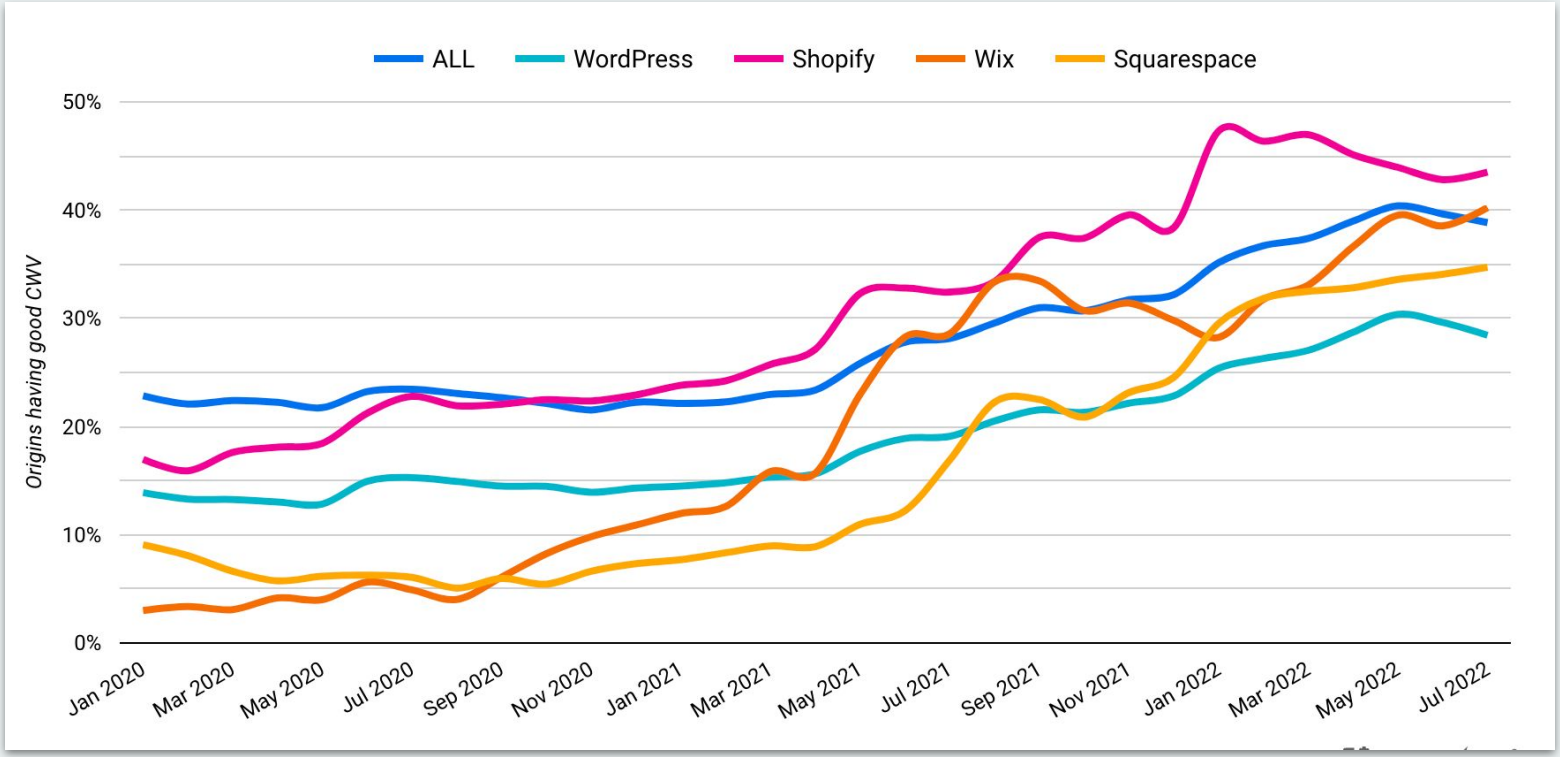
bit.ly/chrome-android-perf-2022

Scaled Activation

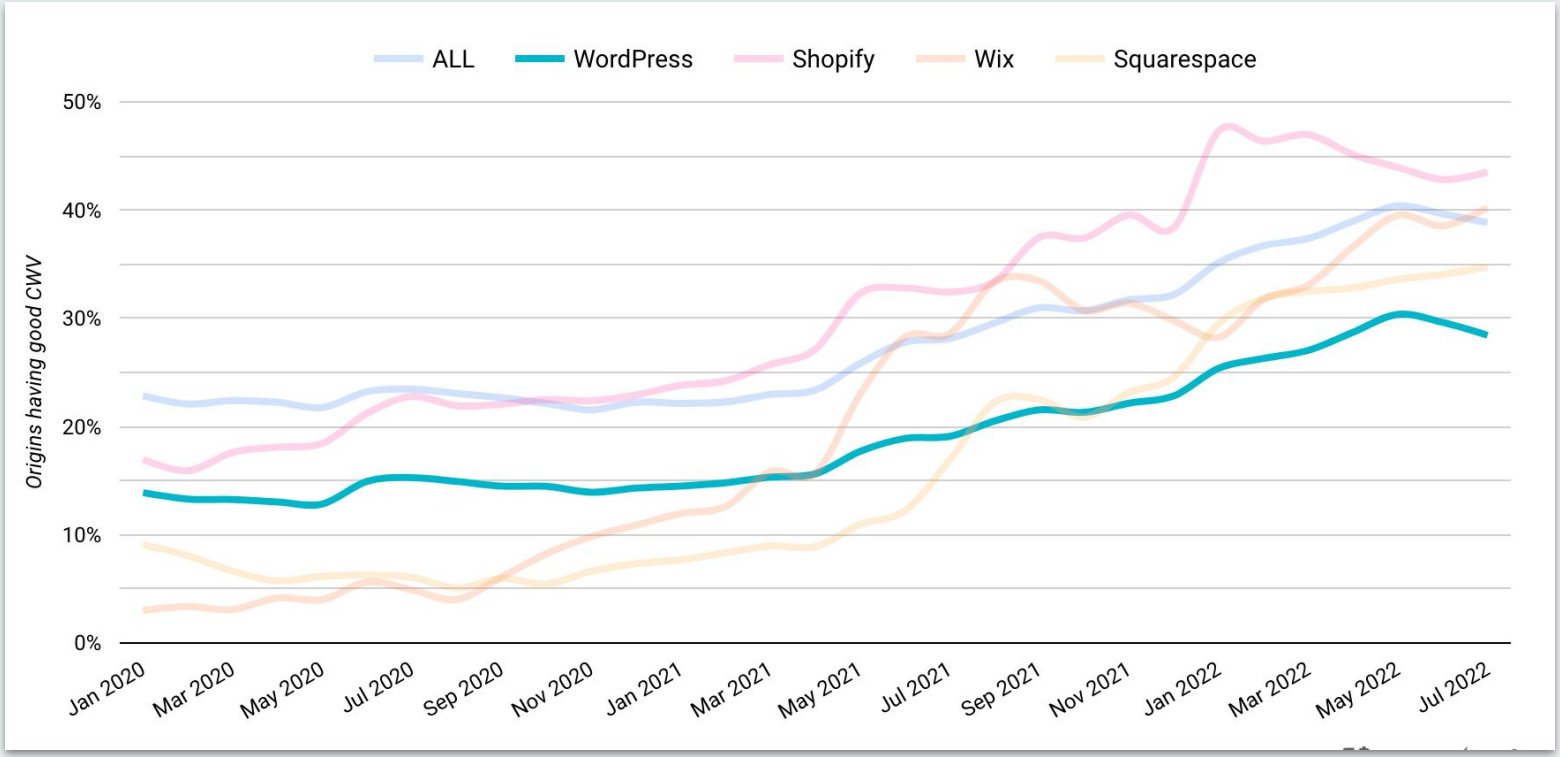


Measuring the web

Percent of websites having good Core Web Vitals



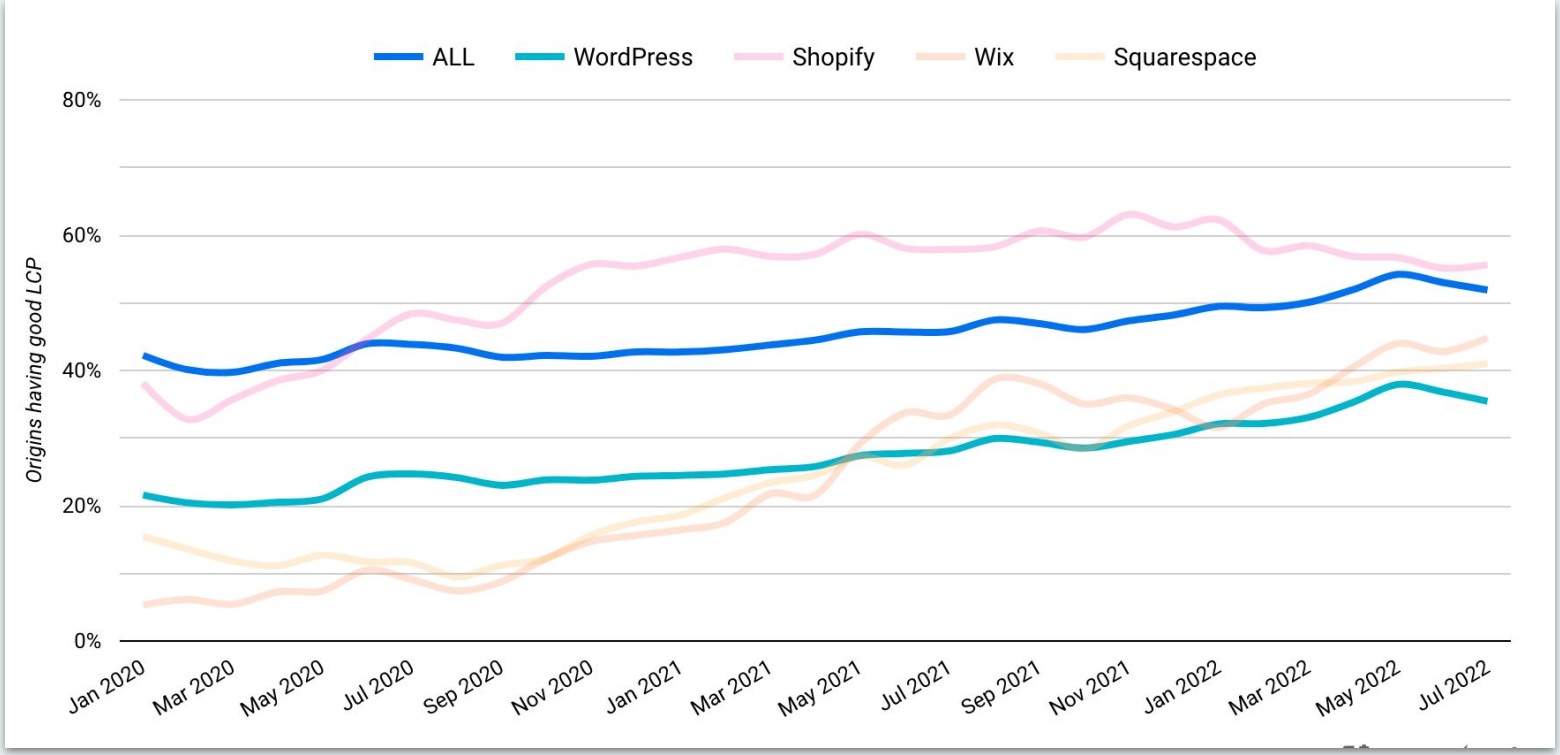
Percent of websites having good Core Web Vitals



Where are the opportunities?

36% of websites are built with WordPress

Percent of websites having good Largest Contentful Paint



What are the opportunities?

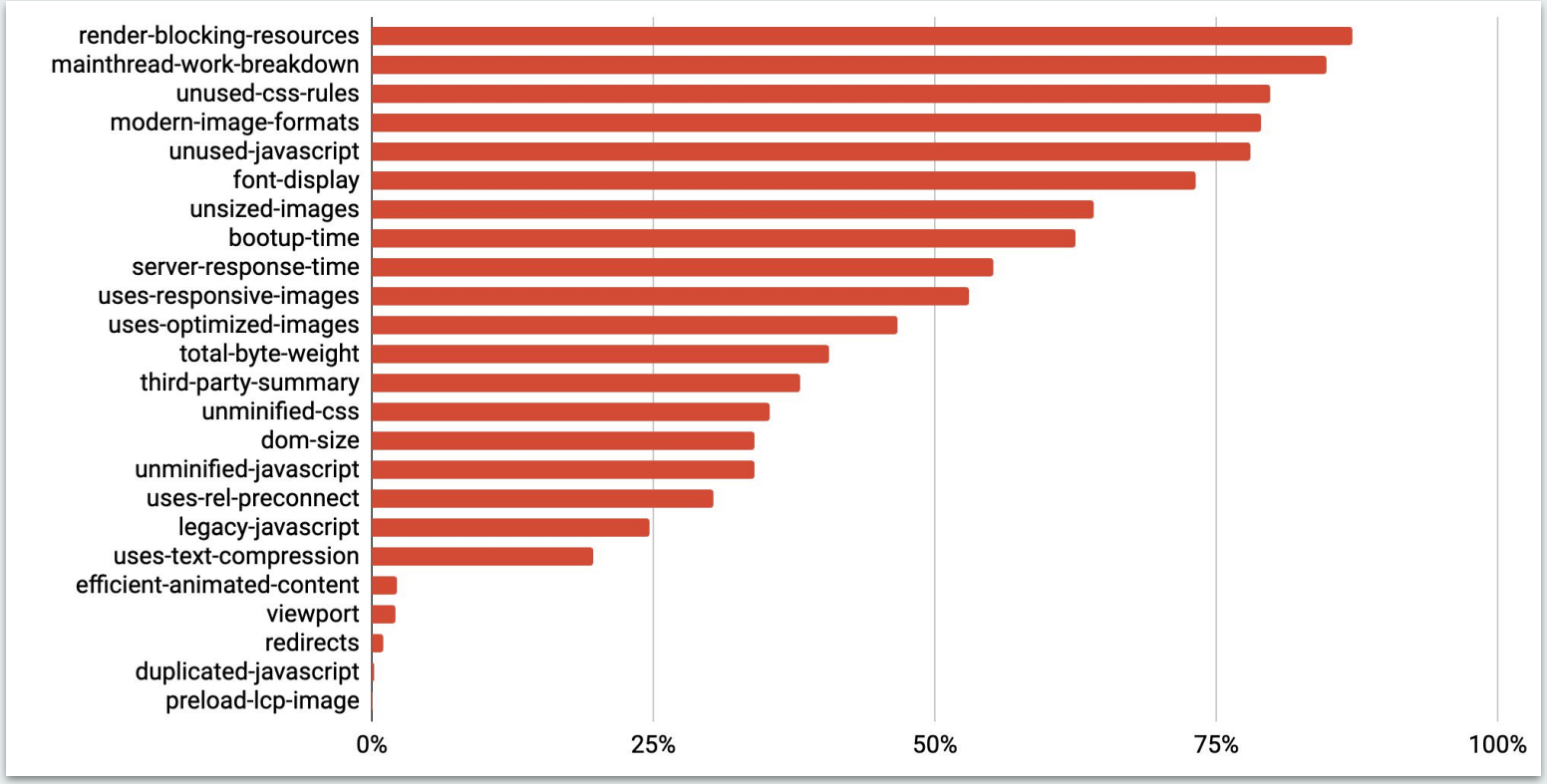
✅ reach

✅ impact

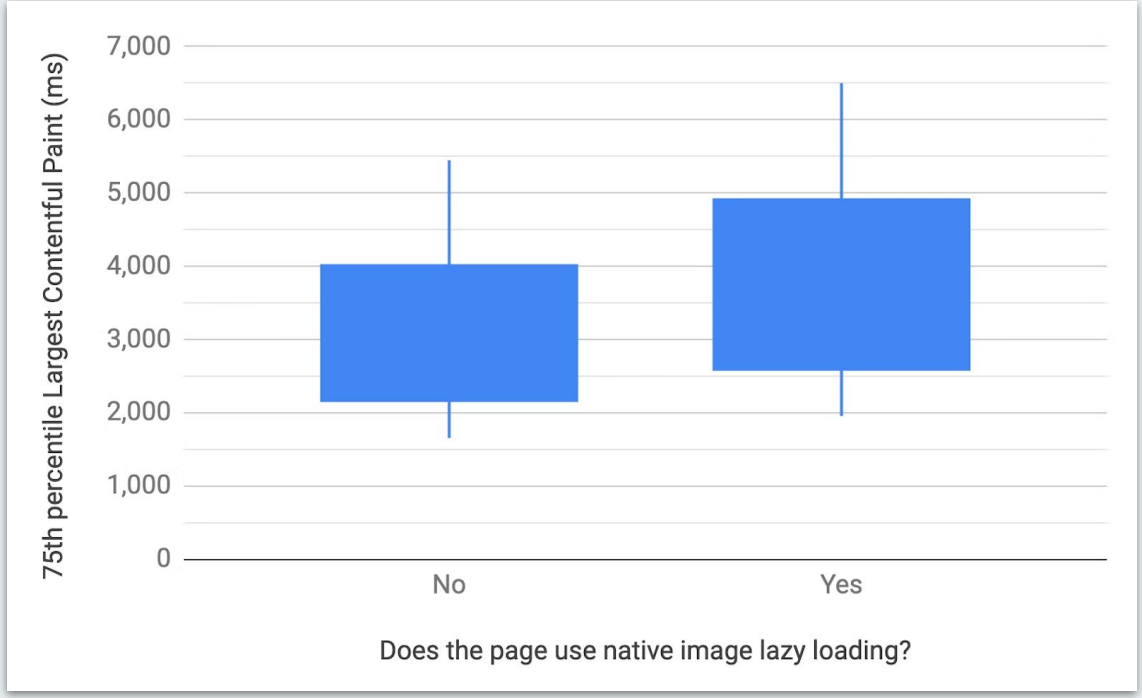
✅ ease

Back to basics

Percent of WordPress sites that fail each Lighthouse audit

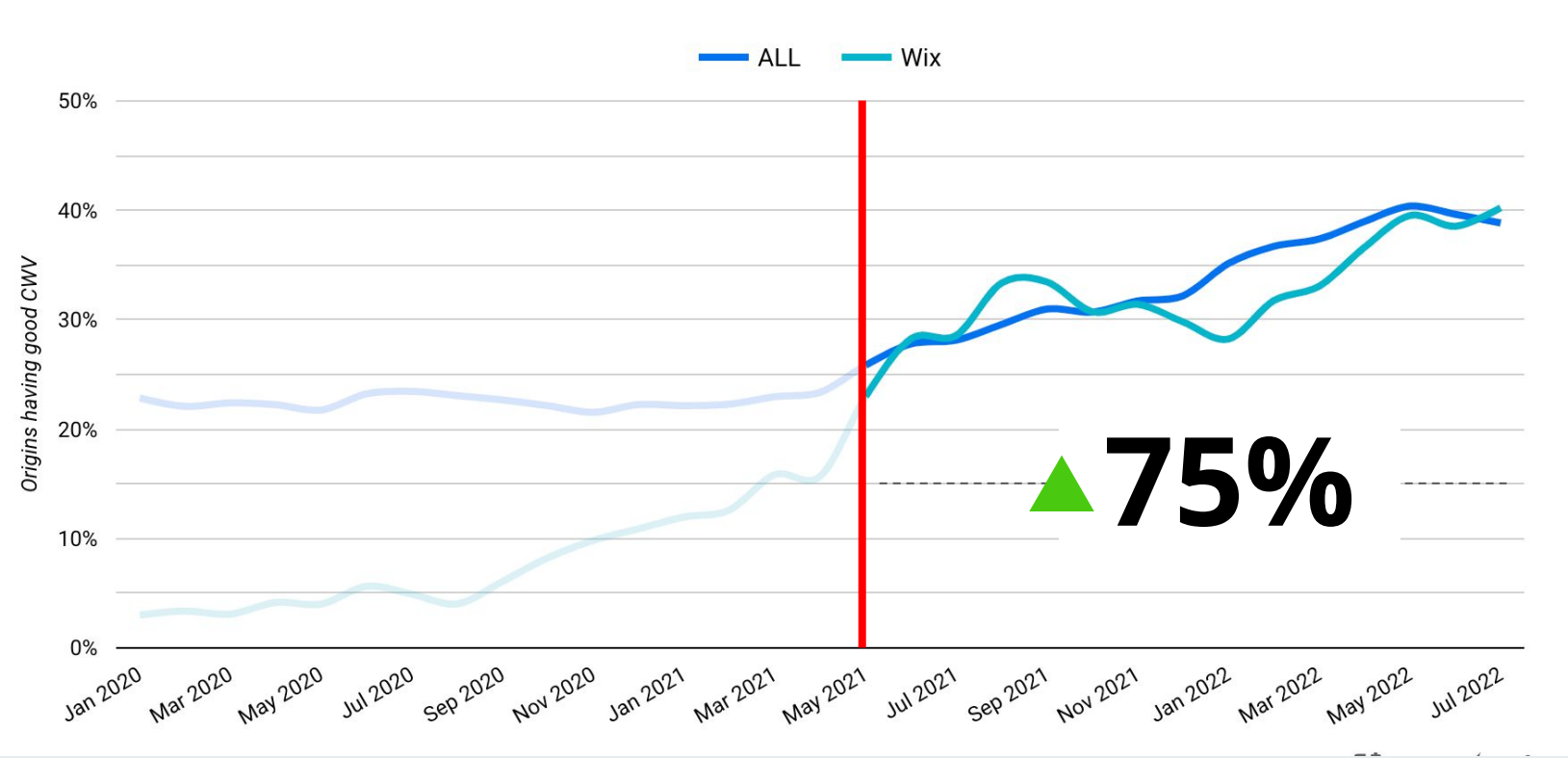


Correlation of LCP performance to native image lazy loading

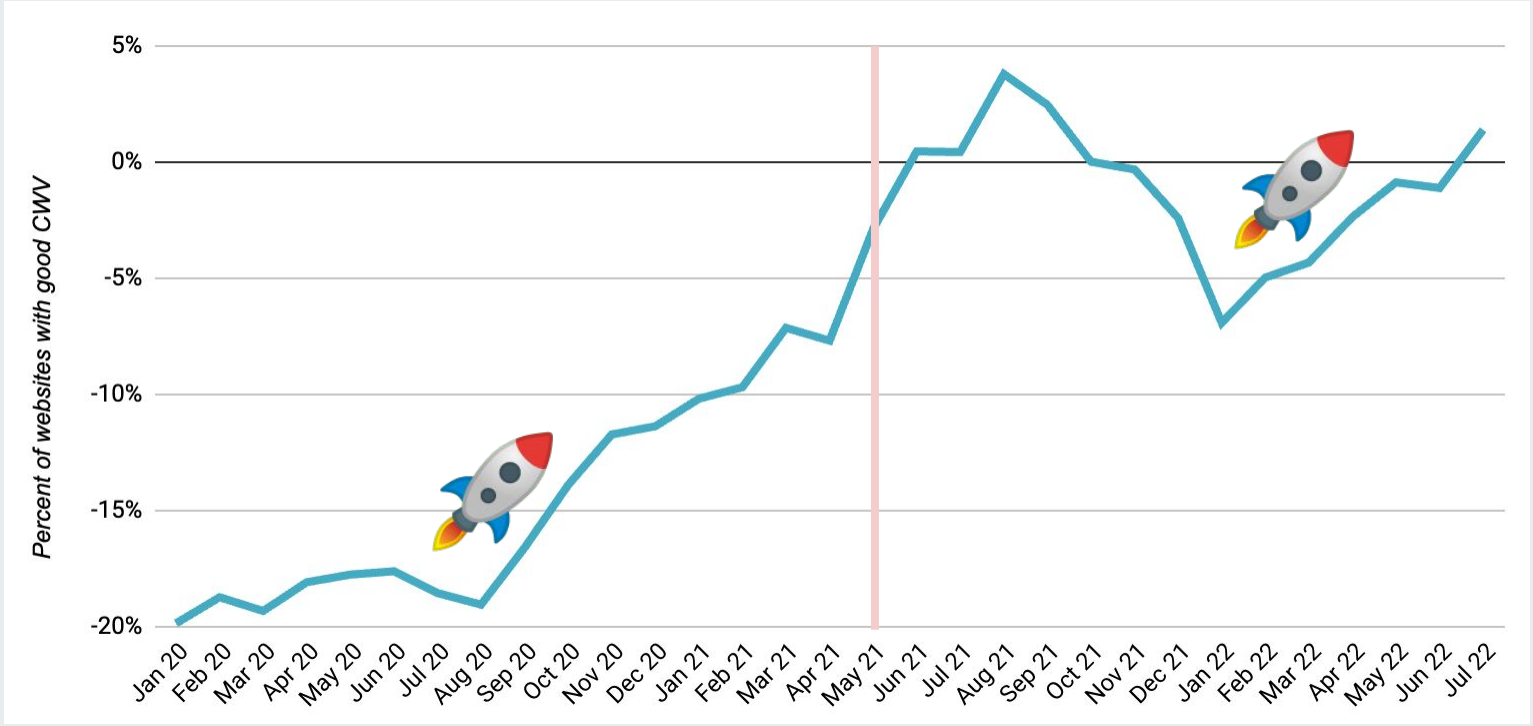


bit.ly/lcp-lazy-load

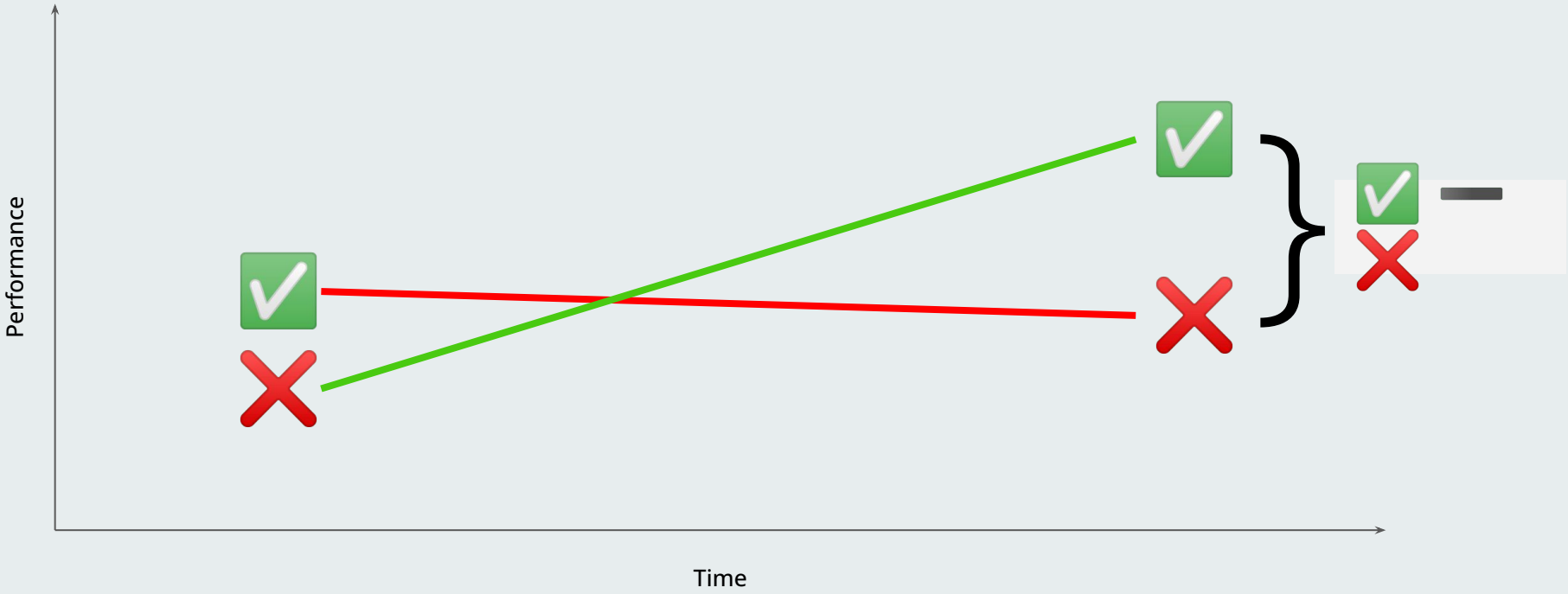
Wix LCP performance before/after some hypothetical change



Wix CWV performance normalized to the global baseline (ALL)



web.dev/wix


Performance
Time

- ✗ **Not an A/B test**
- ✗ **Audit entanglement**
- ✗ **Sample sizes**
- ✗ **CrUX coverage**
- ✗ **Home pages**
- ✗ **Desktop pages**

✅ Ease: Very situation-dependent, but tractable!

What **are** the opportunities?

Audit	Reach	Impact	RI Score
[FID] bootup-time	**83%**	**-16%**	**0.5**
[FID] mainthread-work-breakdown	**89%**	**-12%**	**0.4**
[CLS] unsized-images	**53%**	**-18%**	**0.4**
[FID] third-party-summary	**59%**	**-15%**	**0.4**
[FID] dom-size	**32%**	**-20%**	**0.3**
[LCP] font-display	60%	-7%	0.2
[LCP] total-byte-weight	37%	-10%	0.1
[LCP] render-blocking-resources	48%	-5%	0.1
[LCP] uses-rel-preconnect	29%	-8%	0.1
[LCP] server-response-time	24%	-9%	0.1
[LCP] modern-image-formats	49%	-3%	0.1
[LCP] unused-javascript	84%	-2%	0.1
[FID] legacy-javascript	28%	-5%	0.1
[LCP] uses-text-compression	24%	-4%	0.0
[LCP] uses-responsive-images	34%	-3%	0.0
[LCP] unused-css-rules	50%	-1%	0.0
[LCP] uses-optimized-images	22%	-2%	0.0
[LCP] unminified-javascript	21%	-2%	0.0
[FID] viewport	1%	-36%	0.0
[LCP] unminified-css	11%	-2%	0.0
[FID] duplicated-javascript	1%	-11%	0.0
[LCP] efficient-animated-content	2%	-1%	0.0

Audit	Reach	Impact	RI Score
[LCP] render-blocking-resources	**87%**	**-12%**	**0.4**
[LCP] server-response-time	**55%**	**-16%**	**0.4**
[LCP] font-display	**73%**	**-12%**	**0.3**
[FID] bootup-time	**63%**	**-12%**	**0.3**
[FID] mainthread-work-breakdown	**85%**	**-8%**	**0.3**
[FID] dom-size	34%	-19%	0.3
[LCP] unused-javascript	78%	-8%	0.2
[CLS] unsized-images	64%	-8%	0.2
[LCP] total-byte-weight	41%	-11%	0.2
[LCP] unused-css-rules	80%	-6%	0.2
[FID] third-party-summary	38%	-11%	0.2
[LCP] modern-image-formats	79%	-4%	0.1
[LCP] uses-rel-preconnect	30%	-7%	0.1
[LCP] unminified-css	35%	-5%	0.1
[LCP] uses-optimized-images	47%	-4%	0.1
[LCP] unminified-javascript	34%	-5%	0.1
[LCP] uses-responsive-images	53%	-3%	0.1
[FID] viewport	2%	-61%	0.0
[FID] legacy-javascript	25%	-4%	0.0
[LCP] uses-text-compression	20%	-5%	0.0
[LCP] efficient-animated-content	2%	-2%	0.0
[FID] duplicated-javascript	0%	-3%	0.0

What's next?

How can I help?

HTTPArchive/cwv-tech-report
`/opportunities`

`httparchive.core_web_vitals`
`bit.ly/ha-cwv-opportunities`

Thanks!